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July 1959

VOLUME IV • NUMBER 7

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Published by THE AMERICAN PSYCHOLOGICAL ASSOCIATION

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*Contemporary Psychology: A Journal of Reviews* is published monthly. The yearly volume comprises approximately 384 pages. The subscription per year is \$8.00, foreign \$8.50, single number \$1.00.

Published by the American Psychological Association at Prince and Lemon Sts., Lancaster, Pa., and 1333 Sixteenth St., N.W., Washington 6, D.C.

Second-class postage paid at Lancaster, Pa., and at additional mailing offices.

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# Contemporary Psychology

A JOURNAL OF REVIEWS

VOLUME IV

July 1959

NUMBER 7

## With Reference to Reference

Roger Brown

*Words and Things.* Glencoe, Ill.: Free Press, 1958. Pp. xvi + 398. \$6.75.

Reviewed by JAMES J. JENKINS

Dr. Jenkins is Associate Professor of Psychology at the University of Minnesota, although at this writing he is with the other bright young men at the Center for Advanced Study in the Behavioral Sciences. He has a PhD of 1950 from Minnesota and has been on their staff ever since, concerning himself successively with individual differences, industrial psychology, industrial communication, mass media, readability analyses, the psychology of language, and again with individual differences. He and Wallace Russell are working for the Office of Naval Research on the role of language in behavior and trying just now to coax their results into a book. He and Hildred Schuell had a paper recently on language deficit in aphasia in the Psychological Review and they think it very important. He has got other psycholinguistic irons in his fire too.

THE 'wild boy' of Aveyron has been dead for almost 150 years, but he comes alive again in the first chapter of this book to provide a novel introduction to the rapidly growing field of the psychology of language. Roger Brown who performs this verbal resurrection has played an important role in stimulating the current interest in psycholinguistics and even more importantly

has contributed experimental flesh to the bare bones of proposals for investigation of this domain. He has the distinction of being one of the very small group of workers who has sufficient background in psychology, philosophy, and linguistic science both to conceive and to deliver research in the intersection of these fields. In addition, he has developed and taught courses in the psychology of language at the University of Michigan, Harvard, and Massachusetts Institute of Technology, where he is currently an associate professor. He is uniquely qualified to write this book.

*Words and Things* is aptly titled. Its central concern is with linguistic reference and that concern leads Brown to "such very old problems as the nature of meaning, the language of animals, the relation between language and thought, the character of primitive language, the possibility of phonetic symbolism. . . . In short, a set of real chestnuts." He wants to keep these questions alive for psychologists (who show a tendency to turn to more accessible and perhaps less important problems) and to point out to the psychologist and general reader alike that there is new evidence from many fields of behavioral science which suggests that these classic problems are in fact moving toward solutions. While readers will differ in their evaluation of



ROGER BROWN

the progress being made, they cannot fail to be stimulated by Brown's careful, insightful and highly-readable discussions.

BROWN's line of attack is the one he has sketched out in earlier writings. (For example, see his section, *Language and Categories*, in Bruner, Goodnow, and Austin's *A Study of Thinking*, 1956). He wants to apply the 'category metalanguage,' developed by the Harvard Cognition Project, both to language and to the world that language refers to. Itard's training of the 'wild boy' provides both Brown and us with an example of what he is attempting. The wild boy must first learn that linguistic utterances are not unique events but function as categories. The word *book* is a collection of sounds. Each of the constituent sounds is a collection of attributes that identifies it as a member of a category (*b* not *p*, *k* not *g*, etc.). The whole collection *book* is a member

of a larger class (a class of certain kinds of words). The larger class may be modified in certain prescribed ways (e.g., may take an *s* to become *books*) and may be incorporated in still larger classes of constructions in accordance with rules (e.g., *Show me the book*).

On the other hand, the wild boy must learn that references too are not unique objects but categories. A book is a category of sense impressions. When the sense impressions themselves are categorized, we may recognize some of them as criterial attributes for consideration in identifying the larger category, a book. Some attributes will be essential (e.g., binding, printed pages), some will be probabilistic (stiff covers, dust jackets), and some will be irrelevant (color, size, etc.). The coordinate recurrence of categories, one linguistic, the other non-linguistic, constitutes the heart of linguistic reference. Brown's faith is that if we bring our knowledge of cognitive categories together with our knowledge of linguistic categories and study the interrelations and interactions of these category systems, we will better understand both cognitive and language behavior.

The first step is to show that the units of descriptive linguistics are in fact categories and can be treated with the 'category metalanguage.' This undertaking is both successful and unsuccessful. At the level of the phoneme (distinctive sound elements) the outcome is a happy one. The analysis here and the elaboration of interrelationships of linguistic categories with acoustic and psychological phenomena make a strong case for the importance of linguistic analysis to the psychologist. At higher levels of analysis (morphemes and words) the relationships are more obscure and the argument becomes correspondingly vague. These levels, however, are precisely those which are most difficult for the linguist. (Psychologists may be surprised to learn that there is no widely accepted definition for *a word*. Perhaps we should also be concerned with our casual use of such an obscure variable.) At a still higher level (parts of speech) linguistic definitions improve and, as Brown shows later, psychological relevance again seems indicated. With the way then relatively cleared,

Brown goes on to apply linguistic analysis and the category language to the many-fold problems of reference.

Brown first proceeds to a consideration of *meaning* but finds his chosen tools of little use in this notoriously difficult domain. He considers and rejects in turn mental images, particular responses, and implicit particular responses as the core of "the click of comprehension." His treatment of mediational hypotheses and particularly of Osgood's 'representational mediators' is similarly negative, but his argument here seems to be directed at a superficial conception of the system which reduces it to the particular implicit response case. Proponents of mediational models may with some justice protest this treatment. Brown takes his stand at the end with Charles Morris and argues that meaning is a "disposition to behave in varying ways with regard to the form as the contingent circumstances are changed." Adding that meaning is a "response potential" does not seem to make this any more definite or satisfactory. It is widely agreed that meanings must be inferred from responses regardless of which hypothesized meaning-construct one endorses. Perhaps it would be more fruitful to concentrate on the procedures by which we infer meanings and to let the constructs take more definite form as we advance than to attempt to settle the nature-of-meaning issue by argument.

In the next five chapters Brown puts his analytic tools to work with great effectiveness on the questions of phonetic symbolism and metaphor, reference in animal language, the acquisition of reference terms and cognitive categories, linguistic relativity and determinism (the famous Whorfian hypothesis), and the hypothetical "psychogenetic law" of progression of reference from concrete to abstract. These sections make up the heart of the book and the discussion of these topics is the best to be found anywhere in the psychological literature.

Here the writer is in his element and perfectly at home. In all but one of these chapters (animal language) he presents research by himself and his students which has materially advanced the understanding of these topics. The issues

are carefully analyzed, and research findings from diverse fields are considered and criticized while the fragments are coaxed into a general pattern. Good scholarship and uncommonly good sense are combined with the two systems of analysis to yield important contributions to the psychology of language.

ONE example must suffice to show how Brown proceeds. Phonetic symbolism or sound symbolism is a remarkably viable old chestnut. It has been thrown out of psychology and linguistics again and again but persists in returning when its latest antagonist turns his back. In Brown's terms the question appears in this form: Linguistic categories have varying attributes; referential categories have varying attributes; is it true that some attributes covary over some range of the two systems?

First, to the laboratory: experiments in which subjects assign meanings to artificial words or rate such words on size or brightness show regular correlations between sound progressions and reference behavior. Subjects naming nonsense noises or pictures show lawful consistency between external patterns and invented words.

Now to natural language: hundreds of examples for and against sound symbolism can be found in natural words. When adequate sampling and judgment are employed, the results are negative. However, pairs of opposite words drawn from unrelated natural languages lead American students to high agreement in pairing English words with the unknown words and, surprisingly, the agreement is more often than not correct.

At this point Brown introduces the possibility that these consistencies may be related to speculations about the origins of speech. Exploring competitive theories, he makes clear that his preferences lie with representational theories and suggests that such representational systems were helped along by the ubiquitous noise-size and noise-weight relations available to man in nature.

As the reader settles back content that the author considers phonetic symbolism to be firmly established as an important variable, Brown reverses his field and returns to the laboratory to

evaluate the role of phonetic symbolism in language function. Three clever experiments later, the answer appears to be that phonetic symbolism has no role in function at all! The reader is at last brought to Brown's conclusion that while phonetic symbolism can be drawn from subjects with very high agreement, in practice the subjects do not make any use of this correlative system unless they are directed to do so. Ordinary usage of language, we must conclude, is not sound-representational or imitative (though special exceptions like poetry may exist). The day-to-day dominant function is conventional reference.

While this issue is not by any means the most important one with which this writer deals, the treatment here is typical of his treatment throughout. Following the analysis, he sifts the evidence, and then he and the reader gain understanding and perspective with respect to the problem and its relation to the central theme.

In one sense it is unfortunate that this book appears in advance of the reporting of the findings of the Southwest Project in Comparative Psycholinguistics. In another sense it is most fortunate that this book precedes the bulk of those reports, since it sets the stage for them and provides a matrix in which their significance will be clear. Preliminary reports of the project which the reviewer has seen offer confirming and supporting evidence for Brown's interpretations and extrapolations of existing research, a further indication of the skill with which he has performed his task.

SINCE neither writers nor reviewers (and certainly never both) are perfect, disagreement is inevitable. Three chapters of this book are to the reviewer irrelevant to the major theme. If they function as the author intends, they will serve to stimulate readers to apply themselves to extensions of the psychology of linguistic reference to new areas and problems. If they function as this reviewer fears, they will distract and even mislead. *The History of Writing and a Dispute about Reading* begins innocently and interestingly enough with the development of graphic sys-

tems and winds up in the hotly debated territory of how Johnny ought to be taught to read. *Persuasion, Expression and Propaganda* makes the telling point that linguistic behavior is evidence for inferences about (and hence refers to) the motivation of the speaker and proceeds to discuss defenses against propaganda. *Linguistic Reference in Psychology* starts with questions of technical linguistic reference and ends up in a discussion of the values of social psychologists.

While each of these essays is of interest in itself, they fail to contribute to the theme of the book and are in general less compelling and convincing than the other chapters. They also seem to be prey to oversights which do not occur elsewhere. For example, *propaganda* is defined only in its pejorative sense, "advantageous to the persuader but not in the best interests of the persuadee," without even a note to indicate that this is a popular usage at variance with dictionary definitions and usage elsewhere. Expressive features of language are offered in such a way as to imply that they will be useful in detecting propaganda when in fact the case made by the writer deals with the effect of other sources of information and inference. *Reliability* and *validity* as terms in psychology are treated in such narrow senses as to lead to considerable distortion. In these chapters the reviewer is left with the impression that the writer has strayed too far afield.

It would be an instructive exercise to compare *Words and Things* with other similar books, but no such books exist. Psychological books on language are becoming more plentiful but the area is so vast that there is almost no overlapping at the present time. A few examples illustrate the diversity. Miller's *Language and Communication* (1951), deservedly in wide use, is a detailed consideration of the many facets of research in language and communication with

little treatment of the broad general problems. Skinner's *Verbal Behavior* (1957) devotes itself to a programmatic extension of the S-R laboratory model to embrace language behavior as a special case. *The Study of Language* (1953) by Carroll is a survey, field by field, of the domains bordering on linguistics. Osgood, Suci, and Tannenbaum's *The Measurement of Meaning* (1957) is a description and exploitation of a special instrument for understanding part of language behavior. Each of these books seems to supplement the others, a situation which may be taken to suggest that this is a rich and important field which is just beginning to experience thorough development.

Since Brown has nowhere indicated his intended audience, the reviewer may make some recommendations. The book is well written and of such broad interest that most psychologists will find it good and instructive reading. For those concerned with language and higher mental processes it must be especially highly recommended. For clinicians the chapter on *Progressions and Pathologies*, with its treatment of concrete and abstract reference, will be propaedeutic for further investigations. Students of learning should find the sections on language acquisition and linguistic relativity rich in suggestions for new directions of research.

The book presupposes no extensive knowledge of either linguistics or psychology. Undergraduates and graduates alike will find it lucid and stimulating. It should find a place as an excellent supplementary text in courses in the psychology of language and in the higher mental processes. Of all the books in the psycholinguistic area this is easily the one which is most likely to appeal to the general reader and to convey to him some of the excitement and importance of this new field.



*Essentially style resembles good manners. It comes of endeavoring to understand others, of thinking for them rather than yourself—of thinking, that is, with the heart as well as the head. . . . So (says Fénelon) . . . "your words will be fewer and more effectual, and while you make less ado, what you do will be more profitable."*

—SIR ARTHUR QUILLER-COUCH

# The Way to Do is to Be

Rollo May, Ernest Angel, and Henri F. Ellenberger (Eds.)

*Existence: A New Dimension in Psychiatry and Psychology.* New York:

Basic Books, 1958. Pp. x + 445. \$7.50.

Reviewed by CARL R. ROGERS

*Dr. Rogers, a psychotherapist for thirty years, is known for his involvement in research in psychotherapy and his stimulation of research, and, more specifically, for his development of the therapeutic orientation known as client-centered. In the book under review Rollo May suggests that Rogers' orientation may, in a number of significant ways, be regarded as an independent American version of existential psychotherapy. Rogers was one of the first to receive from the American Psychological Association an Award for an Outstanding Contribution to Scientific Psychology.*

**I**F THIS book is fully and deeply understood, it is likely to disturb American psychologists, both clinicians and experimentalists. For though its overt purpose is simply to present existential psychotherapy as it has emerged spontaneously and independently in a number of European countries, it has two additional purposes which have deeper implications.

It is trying to show first of all the kind of therapy which (largely developed by analysts) is gradually supplanting psychoanalysis in Europe. Since psychoanalysis has only in recent years been adopted as the basic creed of clinical psychologists in this country, it cannot help but be upsetting to discover that in its place of origin it is already giving way to the next wave of thought and practice.

Even more challenging is the second underlying purpose, which is to raise insistent and critical questions about our allegiance to positivism as the be-all and end-all of psychological science. Existentialism in its psychological ramifications is pictured as "the endeavor to understand man by cutting below the

cleavage between subject and object which has bedeviled Western thought and science since shortly after the Renaissance." Instead of this cleavage existentialism attempts to place science in a broader context of humanistic philosophy in which man as an emerging person is always in central focus. Thus in one stroke May (and to a lesser extent his co-editors) is challenging the favorite theory of therapy of the clinicians, as well as the settled dogma of logical positivism so close to the hearts of our scientists.

Since these deeper questions are not the outward concern of the book, but simply represent its underlying intellectual and emotional current, let me turn first to the manner in which the volume meets its more obvious purpose, that of acquainting us with the new philosophical, theoretical, and practical trends which are now evident in European psychotherapy. Rollo May leads off with two long but excellent chapters on existentialism and its significance in and contributions to psychological and psychotherapeutic thinking. These are followed by a somewhat more technical and definitely more academic picture, by Ellenberger, of the historical development of the phenomenological point of view in psychiatric and psychological work, and its absorption into an existentialist orientation in psychotherapy. The remaining two-thirds of the book is taken up with translations of articles and case reports by several representatives of existential psychotherapy, with Ludwig Binswanger of Switzerland accounting for the lion's share of this section.

The two chapters by May, in my opinion, exceptional. They give evidence of profound scholarship and wisdom.

They are clear and penetrating. They show why a new point of view developed in psychotherapy—in the minds of different men, in different places, at about the same time—in answer to the most deeply felt deficiency in Freudian psychoanalysis, namely its theory of man, its view of him. In the terminology of the book, psychoanalysis was most helpful and most effective in its understanding of the *Umwelt*—man in his biological relationship to his environment, his "world around." It has been less helpful in providing us with an understanding of his *Mitwelt*, the "with-world" of his relationship to his fellow men. (Here Sullivan and Horney have in their own ways endeavored to remedy this deficiency.) But the greatest lack has been in the comprehension of the *Eigenwelt*—the "own world" of relationship to one's self. It is here that existentialism and the psychotherapy which has utilized this philosophy pinpoint their contribution.

**B**EFORE endeavoring to describe this contribution, May gives a brilliant but brief interpretation of existentialism, studded with quotable statements. He shows it as having distant historical roots, extending back at least to Laotzu (d. 531 B.C.). ("The way to do is to be." "Rather abide at the center of your being; for the more you leave it, the less you learn.") He traces it through Kierkegaard and his concern with the estrangement of the individual from himself, his passionate pursuit of the problem of how to become an individual, and his belief that a science which is independent of man—completely objective—is an illusion. He analyzes Nietzsche's contribution, that every truth should be faced with the question, "Can one live it?" He adds his own view. ("Existentialism is an attitude which accepts man as always becoming, which means potentially in crisis.") He even, surprisingly enough, adds Norbert Wiener of cybernetics fame to the list. ("It is the greatest possible victory to be, and to have been. No defeat can deprive us of the success of having existed for some moment of time in a universe that seems indifferent to us.")

Building on such philosophical views, existential psychotherapy is concerned with what makes man an emerging *human* being. It sees neurosis and maladjustment as behaviors which destroy man's capacity to fulfill his own being. Anxiety occurs when some emerging potentiality faces the individual and threatens his security. Transference is seen in a new context as an event occurring in a *real* relationship between two people. The remembrance of the individual's past is determined by what he has chosen to become. Truth (and hence insight) exists only as the individual produces it in action, lives it. The aim of therapy is more fundamental than cure. It is to help the individual experience himself and his existence as real. These are a few of the characteristics of an existential form of psychotherapy as it is presented in this volume.

To carry on therapy in these terms involves an understanding of the person in his world. "Existential analysis treats the patient's utterances quite seriously. . . [It] refuses absolutely to examine pathological expressions with a view to seeing whether they are bizarre, absurd, illogical, or otherwise defective; rather it attempts to understand the particular world of experience to which these experiences point and how this world is formed and how it falls apart." Much of the material in the translated articles is given over to the attempts to reconstruct and to understand from within the structure of the world in which the individual lives, the structure of his existence.

Another emphasis is that which May puts upon full human presence. One has the impression that Martin Buber's description of an "I-thou" relationship is close to what is meant by the term *presence*. Frieda Fromm-Reichmann, he quotes with approval—her statement that "the patient needs an *experience*, not an explanation." It is expected that the relationship with the therapist is the meeting of two live, real, human beings, with the therapist fully present to his client. This situation is at the farthest pole from the therapist as an expert, analyzing the patient as an object. It is a living together in communication that breaks the isolation of the patient.



ROLLO MAY

Interviewing a subject at Squam Lake

Perhaps the foregoing paragraphs give a hint or a suggestion of the form of therapy toward which May sees the professional world tending. As we pass beyond psychoanalysis, we may be moving into this more person-centered type of therapy in which both the therapist and the patient with whom he works appear as individuals who are becoming, who are trying to realize their potentialities.

If we are to ask how May sees the 'wave of the future' in so far as logical positivism is concerned, then the answer is less clear. The existential psychotherapists certainly do not give up the positivist point of view in science. In the *Umwelt*, in the relationship of man to his environment, they are, he says, complete determinists. But they think it a serious error to deal with human beings as though their only mode of existence were the *Umwelt*. They believe that it is possible to have a science of man which neither fragments him nor destroys his humanity as it studies him. They see human choice and decision as real and significant in man's relation to himself, and they are firmly opposed to the view of man as an 'empty organism,' as a passive recipient of forces acting upon him. They regard themselves as more empirical than the positivists, because they are open to all of the actual phenomena of

human existence, whereas positivism is limited to tunnel vision.

If this hint of a new science is illustrated by the translated articles, then the picture is a disappointing one. For the most part the thinking is ponderous, the analyses reminiscent of Freudian thinking in their complete avoidance of statements which can be checked. They are, indeed, less heavily burdened with conceptual baggage, as they try to reconstruct the world of the individual rather than fit him into preconceived theoretical constructs. Nevertheless, if this is an example of what psychological science is to be, the act does not live up to its billing.

Much the same can be said for the translations when they are viewed from the clinical angle. The most ambitious is Binswanger's account of the case of Ellen West. She lived, was treated and mistreated by psychiatrists and analysts, was hospitalized, diagnosed, discharged, until finally she committed suicide, before the days of existential psychotherapy. Now Binswanger resurrects her case and re-analyzes it in terms of his current thinking. His reconstruction of Ellen's psychological world is fantastically detailed, but the re-analysis is almost as discouraging as the original handling by Kraepelin, Bleuler, Binswanger, and unnamed others. The author is to be commended for being so brutally frank in presenting a case which was incredibly mishandled. When, however, his final conclusion is that, with the best of his thinking now and the best of modern methods, "it could have been merely a question of postponing the final catastrophe," I cannot but reject his conclusions with some vehemence.

This is a book which gives a compelling hint of what is coming in psychological therapy and psychological science. When it attempts to present the writings of current European psychotherapists as fulfillment of these prophetic hints, then the account is disappointing. While the volume has performed a worthwhile function in making us aware of an important and growing trend, while it will stimulate discussion and debate, nevertheless its initial promise is scarcely fulfilled. In view of the brilliance and depth of the early chapters, I would like to ask Rollo May the

time-worn question, "Why don't you speak for yourself, Rollo?" His answer might be even better than this book.

## But What is a Leader?

C. G. Browne and Thomas S. Cohn (Eds.)

*The Study of Leadership.* Danville, Ill.: Interstate Printers and Publishers, 1958. Pp. 487. \$5.75.

Reviewed by GEORGE C. HOMANS

*who is at present, if it be permitted to classify him at all, Professor of Sociology from Harvard University, at present exposing his mind to the vortices of the Center for Advanced Study in the Behavioral Sciences. When he was a sociological theorist, he wrote An Introduction to Pareto (1934). When he was a social historian, he wrote English Villagers of the 13th Century (1941). When he was a social anthropologist, he wrote Marriage, Authority, and Final Causes (1955). But now, being an elementary social behaviorist and trying to rescue research on the behavior of small groups from inchoate chaos, he is about to write a book to explain why social behavior should be what it is.*

LET us get the mechanics out of the way first. This is a collection of articles on the subject of leadership, put together with a brief introduction by two professors of psychology at Wayne State University. The editors have abridged almost all the articles, and, so far as this reviewer has compared the abridgements with the originals, appear to have done it well. The articles come almost entirely from psychological and sociological journals of recent years, and, within these limits, the selection is good: all of the more famous articles on leadership are included from Lewin to Stogdill, and many of the less well-known ones. What is missing is any field study of a single leader actually at work. Yet there are many good studies that could easily have been abridged,

from W. F. Whyte, *Street Corner Society*, to Peter M. Blau, *The Dynamics of Bureaucracy*. The result is that the book smells more of the laboratory than of the world. Anyone who is already a specialist in small-group psychology and wants to find out quickly what has been written on any particular aspect of leadership will find this a useful reference book. It is doubtful that anyone not a specialist, who wants to find a field delineated in a coherent way, will be satisfied.

The trouble is that "the study of leadership" is not and cannot be a coherent field. When we talk about leadership are we talking about traits of personality? If we are, it is extraordinarily difficult to show that any trait of personality—if we know what we mean by a trait—is regularly characteristic of leaders—if we know what we mean by leaders. Perhaps sheer energy, a high activity rate, comes as close to being general as any other.

gets others to do what he wishes, how does he do it? When we ask that, we are at once thrown into the problems of individual motivation. Why, moreover, should he want *many* others to do what he wishes? Is there a group-task to be accomplished? If so, was it, again, set by higher authority, or did the group somehow adopt it on its own hook? And how is the nature of the task related to the nature of leadership? Finally, if we start thinking about group-tasks, we are forced to ask not just whether a man is a leader but whether he is an efficient leader in accomplishing the task. And what must a man do to be efficient? On all these points the articles in this collection have something interesting to say, but the total impression remains one of incoherence, because, though many of the researchers recognize that leadership cannot be studied apart from group behavior in general, their special focus in fact keeps the treatment of the other things sketchy.

There is a further reason for the incoherence, which seems to the reviewer characteristic not just of the study of leadership but of social psychology in general. This book is full of 'new approaches': new ideas and new instruments to be tried out in new situations. The new approaches seldom fail to discover something interesting—but then they stop. Most of the investigators seem short-winded; they have 'programs' enough but seldom follow them through. What is needed is not more one-shot tests of hypotheses, but more systematic exploration, through parametric studies, of the range of conditions in which the hypotheses hold good, and hence the discovery of the further hypotheses that will mesh with the first to form a body of coherent generalization. Fortunately the short-windedness is not true of all the investigators. One exception—and there are others—seems to be the group led by Dorwin Cartwright and Ronald Lippitt. From Cartwright's forthcoming *Studies in Social Power* we have much to hope.



*Work is man's most natural form of relaxation.*

—DAGOBERT D. RUNES

# What ASo Does to a Leader

Fred E. Fiedler

*Leader Attitudes and Group Effectiveness.* Urbana: University of Illinois Press, 1958. Pp. 69. \$1.75.

Reviewed by EDWIN A. FLEISHMAN

*Dr. Fleishman is Associate Professor of both Industrial Administration and Psychology at Yale University. He has a PhD from Ohio State University and has in the last half dozen years published over 50 articles—in testing (17 by CP's count), in factor analysis (about a dozen), in respect of leadership, especially industrial leadership (more than a dozen), and on learning and the acquisition and measurement of psychomotor skills (nearly a dozen). He does laboratory research, yields statistics, and advises industrial outfits. In CP he reviewed Henrysson's book on Factor Analysis in the Behavior Sciences (May 1958, 3, 129f.).*

HERE we have a description of an important research program on leadership and group functioning, one carried out at the University of Illinois for six years under contract with the Office of Naval Research. The program is more modest in scope than some of the larger, more ambitious, interdisciplinary programs established in the late 1940s (e.g., at Michigan and Ohio State Universities). Nonetheless, no program has pursued with such singleminded purpose the central theme of relating interpersonal relationships within particular groups to independent criteria of the group's effectiveness.

The director of the project, during the first two years, was Lee Cronbach. Fred Fiedler was associate director at that time and then director during the last four years. He presents us with a welcome summary which ties together in a neat package the methodological and substantive contributions of the study.

The original assumption underlying the research was that the effectiveness

of teamwork is a function of the interpersonal perceptions which team members have of one another. Thus, a group member who perceives other members as competitive, hostile, or uncooperative is likely to relate himself differently to them than one who perceives them as friendly, supportive, and cooperative. One might, at this point, hypothesize that the second pattern is found in the more effective groups. The reader who expects answers to this kind of question is, however, likely to be disappointed. The researchers were interested in other aspects of interpersonal perception.

The interpersonal variables that concern them are perceptions of *similarity* between the personalities of group members. For example, a leader may perceive a high similarity among group members or he may perceive them as quite different from one another. Also the leader may describe himself in a manner similar to the way in which he describes other group members, or he may perceive himself as having quite different characteristics from other group members. The focus of the study is, then, on how these perceptions of similarity, especially the perceptions of the leaders and of the key group members, are related to effective teamwork.

A MAJOR portion of this volume describes the mathematical and methodological studies seeking to find a reliable and feasible way of measuring (assumed) similarity (AS). (This review cannot do justice to the painstaking efforts to assess different formats, methods of administration, and scoring techniques. Some of the important publications of Cronbach and his associates on profile-similarity grew out of this work.)

The measure used most frequently in the substantive phases of the program was termed ASo ("Assumed Similarity between opposites"). Typically, ASo was obtained by a short questionnaire by means of which the leader describes the person with whom he works best and the person with whom he works least well. If he describes these two people as being quite similar, he gets a high ASo score; that is to say, he perceives little difference between these group members. The researchers present evidence that a high ASo leader (one who does *not* see large differences between 'good' and 'poor' members) is a person who maintains little psychological distance from others. He has greater feelings of closeness, acceptance, and warmth even for those with whom he cannot work. The low ASo person tends to be more distant in his personal relations and is more likely to reject a least-preferred worker.

But how is all this related to group effectiveness? Fiedler and associates pursue this question relentlessly in basketball teams, surveying parties, bomber crews, army tank units, open-hearth steel shops, and boards of directors. Sociometric measures as well as ASo measures were obtained. We have here a picture of an intensive research effort built around a few variables, reliably measured, replicated in a wide variety of different groups.

THE results are not simple, but they are surprisingly consistent. First of all, it is found that in order to predict group productivity, the leader must be sociometrically accepted by group members. If he is accepted, he is most effective if he maintains a certain psychological distance from his men and especially from his key subordinates. High ASo leaders may also be effective, but this happens mainly in groups in which they do not sociometrically pick their own key subordinates. Fiedler interprets this lack of endorsement as also showing emotional distance of group members, but at a more "conscious level."

The general conclusion, somewhat oversimplified, is that the most effective groups are those in which the leader maintains an intermediate degree

of psychological distance. Thus, he does this as a result of two interacting attitudes. He may have psychological distance "built into him" (low ASo). He compensates for this to some extent if he likes and endorses his key subordinates. If he is a warm, accepting, uncritical person, he may maintain psychological distance by avoiding his key men. Both patterns apparently lead to effective teamwork.

Whether or not the reader accepts this interpretation hinges on whether he accepts Fiedler's assumption about what ASo really measures. While the evidence presented is impressive, this reviewer would like to see more behavioral referents to tie down just what leaders with high or low ASo actually do.

Yet Fiedler's conclusion fits with a growing body of data from other sources. For example, the Ohio State studies indicate that effective leaders keep a balance between high "consideration" and "structure." Overemphasis of either pattern at the expense of the other is ineffective. This intermediate position, of course, may be the way in which the leader compromises the conflicting demands on him. This Illinois research did not, for example, consider the potent influences which stem from the larger organizational contexts within which leaders and other group members must often function. It might also have been useful if the ASo concept could have been discussed in relation to "constructs" used by other researchers to describe leadership attitudes. For example, depending on the research program under consideration, a leader may be "employee-centered," score high in "consideration," be permissive, show "self-awareness," or be "socially sensitive." Where, for example, in this kind of matrix does Fiedler see the high ASo leader?

It appears, then, that Fiedler and his associates have indeed got hold of some interpersonal variables, which in combination, really do predict team effectiveness. Most certainly this report becomes required reading for research workers concerned with leadership and group behavior.



## What Princeton Men Are Like

Otto Butz (Ed.)

*The Unsilent Generation.* New York: Rinehart, 1958. Pp. 189. \$2.95.

Reviewed by W. LESLIE BARNETTE, JR.

*Dr. Barnette is Professor of Psychology and Director of the Vocational Counseling Center at the University of Buffalo, where he also undertakes to counsel PhD candidates as to their careers. He has lectured on vocational and advised about counseling in India, Cairo, Beirut, and Athens, as well as Buffalo. He likes people and he likes to teach.*

**T**HIS is a collection of eleven free-floating essays on life goals, attitudes about religion and education and sex, career plans, family backgrounds, by a group of Princeton undergraduates, all of whom were seniors at the time of their writing (1957). The editor, who is Assistant Professor in Politics at Princeton, describes this survey as a "small private project" which makes no claim to being a representative sampling of student opinion at Princeton.

Apparently an opinion-poll research was considered at the outset but abandoned both because of lack of time and resources and because the results would not be sufficiently "spontaneous." In the end, the technique used was deceptively simple: armed with a typed paragraph of instructions, the editor secured a group of agreeable respondents from the Princeton Student Center who appeared to be "literate and conscientious enough" to write this long essay and to complete the project prior to graduation. None of these respondents, so it would appear, was "cold"; the editor had had some contact, however slight, with each of them previously. Perhaps that is why he was able to talk them into writing these long essays.

It is regrettable that a person better trained in sampling techniques was not included in the project, so that something more substantial could have resulted. Just the same many of the essays will be of absorbing interest to

psychologists, not only for their frankness, but also because they will be useful as outside readings in undergraduate courses in normal personality, adjustment, mental hygiene, and the like. Several of the essays could find good use if advanced undergraduate students were asked to analyze them for themes or to point up the significance of early learning as reported here.

The editor, as well as some of the authors, takes a rather lofty position about these essays. A good deal of self-awareness appears in the essays, yet there sounds throughout a pontifical and optimistic note on the theme of "hope for the U.S.A."—in that all of these young men appear to be ambitious, aware, introspective. Most of the respondents rightly see these attributes as a tribute to their liberal Princeton education. The literary styles of the majority of these young men are very good (another tribute to Princeton) and there appears to be a minimum of braggadocio about their stories, possibly because all were anonymous.

**S**OME of this is fascinating reading even though one runs, not surprisingly, into stretches of pompous sophomore prose. A few examples to give the flavor:

An erratic but strong father, very concerned about façade, who married an elevator operator, the marriage ending in divorce. The son was adopted by a Princeton philanthropist. The themes in the essay all center around hard work (achievement and security).

The gentleman's son from a rich, "country club" family, who already has the *Fortune Magazine* attitude about the role of the wife and who is calculatingly "on the make" for big business—the embryo Organizational Man.

The budding military career man who is rather clearly aware of his own prestige drives and for whom four years at Princeton have been a "terribly corroding influence" in regard to his Roman Catholic faith. Lots of guilt about sex here. Work and prayer are the answers for the unknown future.

An individual "at bay": an unloving home, helpless mother, authoritarian father. The son, during his prep school days, reports some remarkable heterosexual experiences. Twice suspended from Princeton and, after a military hitch, he returns to the University but still feels "outside."

There are some nice contrasts here: the Jewish student who comes through intact in contrast to another Jewish student who is the outsider; the Roman Catholic student who belligerently survives in contrast to the young man who, coming up through Prussian parochial schooling, "leaves the field"; the economically poor, handicapped young man who works hard at college versus the gentleman's son who sees it all from a relaxed, Olympian position.

Most all of these young men see their Princeton education as highly satisfactory and definitely worthwhile (there is only one complaint that this education was not vocational enough). This is a refreshing antidote to all the current talk about the increasing 'professionalism' of the liberal arts' curricula. Surprisingly few of these young men, very close to graduation, have formulated specific plans regarding careers but they do not appear to be worrying. The general flavor is one of security about their superior education which has equipped them to face the world without too much hesitation.

Much of this is quite a different picture from what the English-Literature elders of these young men presented in an earlier and widely-read symposium in a liberal weekly magazine (1). The authors of the present series of essays were not asked about 'influences'—literary or otherwise; it would have been rewarding if such an item had been included in the editor's instructions. One can detect, however, the search for security and safety in some of these essays—the "earnest but dull" adults about which the Department of English chairmen reported—but, on the whole, one

finds more awareness and questioning of conformity (about which several of these students have done a lot of thinking) of social institutions and the like than one might have assumed from reading only what 'the professors' had to say in the earlier magazine article. Still and all, aside from instances of adolescent rebellion and defiance, one may yet detect a kind of alert caution that the elders previously noted.

This reviewer cannot but wonder what a group of psychologists, should they tackle this type of study, would discover. Possibly some of our people in social psychology, the dynamicists, ought to revive the earlier work of Waller (3) or of Loomis and Green (2), and proceed from thence. PhD thesis candidates please note.

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2. S. D. LOOMIS AND A. W. GREEN. Pattern of mental conflict in a typical state university. *J. abn. soc. Psychol.*, 1947, 42, 342-355.
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## Luther: Psychoanalyst

Erik H. Erikson

*Young Man Luther: A Study in Psychoanalysis and History*. New York: W. W. Norton, 1958. Pp. 288. \$4.50.

Reviewed by HAROLD G. McCURDY

who is Professor of Psychology at the University of North Carolina and is interested in psychoanalysis, small-group behavior, art, writing, and poetry. See his review of William Phillips' Art and Psychoanalysis in CP (Jan. 1958, 3, 1-3), where you will learn more about him.

WHAT can a refined contemporary existentialist do with a burly, coarse-grained, warm-hearted, rebellious,

late-medieval theologian? He can take him on as a patient, and gently, suavely, sweetly cut out his guts. The extirpated organs in this case are God and Christ. The prosthetic substitutes are, respectively, a negative conscience and a suffering ego.

Despite its medical aspects, Erikson's book is really more of a tract than a case history. The young Luther is presented as a sort of hero, an existentialist hero taking "a decisive step in human awareness and responsibility"—in the direction of Marx and Freud. That role almost necessarily brings him to psychoanalysis. His theology then proves to be a projection of a conflict with his earthly father, and his character and talents are revealed as springing from an anal-erotic fundament, stimulated by parental assaults on his buttocks. The familiar syndrome of "suspiciousness, obsessive scrupulosity, moral sadism, and a preoccupation with dirtying and infectious thoughts" originates there, as well as the powerful oratory, which, as any psychoanalyst must know, is a kind of displaced farting. Luther had a vivid, blunt way of putting things, and Erikson is happy to discover among the 6,596 entries of the *Table Talk* the melancholy exclamation, at a moment when Luther thought he was about to die, "I am like ripe shit and the world is a gigantic ass-hole."

Luther was no prude. His monastic asceticism of many years did not make him mealy-mouthed. Neither did it castrate him. Erikson admires his convincing genitality when he finally came to take a wife. He was potent, fertile, and warm. Nothing neurotic there. Not even the prolonged asceticism can be held against him. It was the done thing in those days, especially if a bolt of lightning knocked you to the ground and almost scared you into Eternity. Besides (and this insight is worth the price of the book) the monk in his Augustinian cowl was a psychoanalyst-in-training after all: the training analysis is medieval asceticism brought up to date.

Applause, I believe, is one of the rarest psychoanalytic sounds. Yet I think I heard it breaking out from Erikson's muted phrases when the topic was Luther's assaults on the Roman Church. Erikson does not object merely to the

indulgences and other abuses which aroused Luther; he despises the whole organization. He denounces it for "robbing medieval man of just that existential identity which religion owed him," and for practising a "systematic and terroristic exploitation of man's proclivity for a negative conscience," a fatal human tendency toward disintegration in which "almost anybody can be prevailed upon to participate by an ideological system which blocks all exits except one, that one adorned with exactly matching symbols of hope and despair, and guarded by the system's showmen, craftsmen, and torturers." Luther, charging like a wild boar against this system, is what Erikson applauds.

Luther, however, can scarcely be totally contained within the anal-erotic formula. The blustering old beast believed in God, believed also in Christ. It was on religious belief that he based his life. He was ready to be martyred for it. As Roland H. Bainton has put it in his authoritative biography, *Here I Stand* (Abingdon, 1950; Mentor, 1955), "The primary consideration with him was always the pre-eminence of religion. Into a society where the lesser breed were given to gaming, roistering, and wenching—the Diet of Worms was called a genuine Venusberg—at a time when the choicer sort were glorying in the accomplishments of man, strode this Luther, entranced by the song of angels, stunned by the wrath of God, speechless before the wonder of creation, lyrical over the divine mercy, a man aflame with God." And he carried with him Melanchthon, Dürer, and in the course of time Bach—scholarship, art, and music. He does not carry Erikson. Erikson inhabits an entirely different region, a region where God does not exist and Christ is a myth of the Unconscious, and where Luther himself can be mistily perceived as an ectoplasm undergoing various interesting transformations, now as Freud, now as Hitler, and now again as a Latin-American revolutionary clutching an anti-capitalistic sword instead of a Bible in his big fist.

One suspects that Luther would not really have made a very satisfactory patient. He would not drop a penny in the Pope's box for an indulgence. What would he have said to the analyst's fee?

## Fighting: Its Causes and Control

John Paul Scott

*Aggression*. Chicago: University of Chicago Press, 1958. Pp. xi + 149. \$3.75.

Reviewed by LEONARD CARMICHAEL

*Dr. Carmichael is Secretary of the Smithsonian Institution, lately President of Tufts University, not so lately a dean at University of Rochester, a professor at Brown University, an Assistant Professor at Princeton. He is by now a general psychologist with special articulation in the developmental and physiological areas. If you do not know what he looks like, you can see him with the President of the United States in the American Psychologist (Aug. 1958, 13, 491) or with a giraffe in CP (Aug. 1957, 2, 204): three ectomorphs. His most recent book is Basic Psychology (Random House, 1957; CP, Aug. 1957, 2, 203-205). For CP he has reviewed Ronald Fletcher's Instinct in Man (June 1958, 3, 161f.) and Stanley Cobb's Foundations of Neuropsychiatry (Jan. 1959, 4, 9f.). For a picture of John Paul Scott, the book's author, see CP, Sept. 1958, 3, 275.*

Is war inevitable? Are human beings basically so constituted that they must fight? What did William James mean by "the moral equivalent of war?" Psychologists are often asked questions like these. The present short book is a serious effort to give a scientific answer to these problems. It examines psychological, physiological, genetic, anthropological, ecological, and sociological evidence bearing on the nature, the conditions of activation, and the control of aggressiveness in animals and men.

The author is a graduate of the University of Wyoming and of Oxford, where he held a Rhodes Scholarship. He received his PhD degree at the University of Chicago in zoology. Since 1945 he has been a member of the research staff of the Roscoe B. Jackson

Memorial Laboratory at Bar Harbor, Maine, where he now is Senior Staff Scientist and Chairman of the Division of Behavior Studies. He is especially well known for his research on the genetics of behavior in dogs. His book *Animal Behavior*, 1957, was recently reviewed in CP (Sept. 1958, 3, 274f.).

The word *aggression* Scott defines as the act of initiating an attack in fighting. The present importance of a study of this subject is emphasized, as the author notes, by the fact that it is now probably a military possibility to wipe out essentially the entire human race by the aggressive use of radioactive arms. This grim recognition of the possible danger of aggression does not keep the book from giving full notice to the fact that aggression under certain conditions is useful and that it sometimes produces pleasures that are deeply enjoyed. Scott also notes that, from a biological point of view, aggression has almost certainly led to the survival of many species of animals.

**F**IGHTING is widespread in the animal kingdom. It occurs in fishes, amphibians, reptiles, birds, and mammals.

The author shows that the role of learning in determining the conditions that call out fighting and its character is fundamental. He reviews some of his own experiments on the cause of aggression in mice and rats to show that the primary stimuli for fighting in these animals is a mild degree of pain. After learning, however, aggression is often called out by secondary stimuli. If two mice fight repeatedly, they soon form a dominance-submission relationship, in which the beaten mouse always runs away and does not fight. The result of

this new relationship is important because the victorious mouse becomes less and less severe in its attacks when its dominance is firmly established. Some mice also form habits of not fighting while living together as young animals, and this inhibition carries over into the adult lives of these individuals. Sometimes aggressive fighting can be restored in a mouse that has acquired the habit of running away in the face of an attack, but this requires a long period of carefully planned training.

Scott points out that Dollard and his associates at Yale make a good case for the idea that frustration is a cause of aggression. Scott, however, considers it an exaggeration to call frustration the only basis for aggression because the hypothesis does not seem to explain the results of many animal experiments and some observed human reactions. He points out that when you want a mouse to be highly aggressive, you do not frustrate it but give it success in fighting. This rule may apply to football teams, too. Frustration, moreover, may produce kinds of behavior other than aggression. Mice that are highly stimulated to fight but not able to do so may start digging holes. Indeed some experiments convince the author that frustration leads to aggression only in situations where the individual has a well-established habit of being aggressive.

Scott's view that aggression is not necessarily a bad thing leads him to advise parents and teachers to distinguish between harmless and harmful aggression and to let children have some reasonably beneficial aggressive outlets. He notes that Freud felt that a certain amount of aggressive behavior was inevitable because a "basic cause for aggression was instinct."

THE physiology of aggression is related to much of the work that has been done by Cannon, Bard, Ranson, Masserman, Hess, Delgado, and others on the neural and hormonal basis of anger and fear. The book gives a diagram showing the physiological causes of fighting, in which the relationships of brain, viscera, skeletal muscles, and the hormones are indicated to show that an

individual has no internal need to fight but rather that the stimulation that sets off the mechanisms for aggressive behavior comes from the external environment.

Scott comments upon the widespread tendency in the vertebrates for the male to show greater aggressiveness than the female. In every species of the primates, males are larger, stronger, and more aggressive than females. Sex thus has an important physiological effect on aggression, acting in part at least through the male sex hormone, as indicated in the difference between the plodding ox and the ferocious bull. Castrated male mice remain peaceful like females until given doses of male hormone when they immediately start fighting.

Studies of dogs show the inheritance of differences in aggressiveness. Basenjis show a high percentage of aggressive individuals while cockers show few such individuals. When crossed, the first generation appears to be intermediate. When these animals are crossed back to the pure breeds, the offspring are more like the cockers or more like the basenjis in aggressiveness depending on which way the cross is made. It is estimated that it would take a minimum of two genes to account for such an effect.

The author feels that there is great variability between individuals in aggressiveness, apart from their learning. When a low threshold is taken to mean that an organism is easily aggravated, Scott concludes that, apart from the cultural heritage, human beings show a rather low threshold for aggression when compared with other primates. Among human beings he further notes that men tend to have a lower threshold than women. This difference between men and women he attributes to the male sex hormone and to males' superior

equipment and consequent greater success in combat. He also notes that in our society well brought-up boys are taught that they must be aggressive to succeed in life.

**W**HAT then should be done about aggression in a world in which fighting has become so potentially lethal?

One main answer given by the author lies in the importance of maintaining an ordered society in which social dominance is well established. In the hen yard, after the flock organizes itself into a dominance hierarchy, there is little fighting. This kind of peace is also true in other animal groups. Scott considers the phenomenon of dominance in human societies in some detail and concludes that much peaceful behavior depends on 'invisible' dominance orders.

Finally he makes the point that, in spite of the almost overwhelming tensions of our age, the scientific understanding of aggression is becoming so clear that there still remains the chance that this knowledge may be used to help in preventing the ultimate catastrophe of a wholesale atomic war.

So it is that in this excellent short book the author brings to bear, upon what is possibly humanity's greatest problem, his knowledge of comparative psychology and of modern biology, including experimental genetics and ecology. His volume opens many specific questions that urgently need more complete study. Because of the truly radioactive importance of the topic considered, this volume deserves careful consideration, not only by psychologists and social scientists in their laboratories and academic studies, but also by those in positions of authority whose decisions may affect the policies of nations toward peace or war.

III

*Crafty men contemn studies, simple men admire them, and wise men use them, for they teach not their own use; but that is a wisdom without them, and above them, won by observation.*

—FRANCIS BACON





## CP SPEAKS

### IS BIGGER BETTER?

THE fact that psychology is getting big is a bother for those who like to hover over small things and see if one can tenderly help in their growth. It is all the worse if the things, as they get big, get more mature, as psychology is certainly doing in some, if not all, respects. For one thing, if you try to exercise upon psychology even the most furtive direction, it can 'talk back.' We have many self-conscious and solemn appraisals of where we are going, both science-wise and profession-wise, but I want to say a few words just about bigness, as such.

For one thing, we exemplify William Graham Sumner's principle that the rich get richer; the big lobsters gobble up the little lobsters, and very interesting little lobsters are lost in caloric values for the king lobster. People with good ideas, good methods, good results, must compete with lots of other people for journal and program space. Relatively few ideas can be kept juggling. If you believe in something new in perception, you are immediately classified as Gibsonian or Postmanian. If you have something to say about learning theory, than surely you must be Hullian or Skinnerian. You must be a Freudian or you are nondynamic. You must find warmth and light in existentialism or you must regard it as rubbish. Worst of all, if you believe in a sustained effort at unity and don't happen to accept any existing unity, you must of course be an 'eclectic.' Thus, big categories are regarded as valuable.

Part of this is inevitable as a result of growth. Much of it, however, is an expression of a labor-saving movement. It is like administrative simplification through bigness in the organization of the American Psychological Association,

the 'APA.' Everybody knows that the experimental psychologists ('Division 3') and the clinical psychologists ('Division 12') represent different nodal points not only for tasks to be done, but for coagulation of supposedly more or less homogeneous ideas, and even homogeneous populations of psychologists. And as the subdivisions grow, we are 'too busy' to be bothered much by those persons in other bailiwicks. Our journals represent very self-conscious specialization conceived in the sense of general excellence—as what specialization is not excellent?

When Kenneth Clark undertook to evaluate the new status of psychology as a profession (*America's Psychologists*, 1957), this had to be done as an official 'APA' job. And now there is not only, in America, a standardization of professional psychology, but a standardization of the way of looking at psychology as a standardizing process; that is, as a way of training people into a mature, self-competent, good, reliable kind of professional psychologist. Since Dr. Clark is an honest and competent man, he has every reason to be proud of what he did. I am not saying that the book could have been done better, or even as well, by someone else. What I am saying is that Dr. Clark did an 'APA' job in a mature and monolithic way, and, if one doesn't see the development of professional psychology as he saw it, it is just too bad. There is no other 'APA' presentation available, nor will there be any other kind of a presentation in this generation which will have any such role in focusing and defining the professional psychologist's conception of his profession. I don't know whether Sigmund Koch will be able in his seven volumes (*Psychology: A Study of a Science*, I, 1959) to by-

pass any of these difficulties, but I see no reasons in the history of psychology or the organization of American professional life to believe that he will escape. In fact, the preliminary bouts suggest that he is already lassoed, pinned, thrown, and succumbing to the same institutionalizing and centralizing forces that have been described. If he insisted on going independent, he would be a nuisance.

Another trouble with bigness! Despite what the editor of *CP* can do to prevent the standardization of a particular point of view toward a new book—sometimes by providing for a strong 'pro'-review and a strong 'anti'-review of a given book—he becomes the agent of a huge, centralizing force where the weight of contemporary organization massively 'stands for' or 'stands against' a person and a trend as well as a book; and he knows how heavily this responsibility must be taken.

Words of protest are the most impotent things in the world. Why utter them? Only because centralization, along with its labor-saving role, can have a numbing, a life-sapping effect. Many have been protesting against the 'study group' method of evaluating, assessing, and supporting research fostered by government funds. But this is child's play compared with APA official standardization. This issue is worth, I believe, getting quite unpopular about, if anything positive can be done to salvage that little tentative, individualistic, authority-ducking creativity, that loving kind of initiative, from which so very much has germinated in the history of science.

—GARDNER MURPHY

### AMERICAN MEN OF SCIENCE

KNOWLEDGE is one and continuous, but description is analytic and necessarily, though falsely, discrete. How do you divide the scholars between the humanists and the scientists, and the scientists among the sciences? There are no specific special creations and hybridization between any pair of sciences may yield vigorous offspring. Yet there has to be a taxonomy of knowledge in spite of nature's continuities. All departmentalism makes trouble and the who's-who

volumes are no exception. You cannot list everybody in one volume; it would be too big to use and too expensive to buy. You must separate the eminent from the undistinguished, the scholars from the otherwise eminent, the scientists from the otherwise scholarly, the psychologists from the other scientists. The great difficulty arises when you wish to dichotomize the sciences, for the dividing line always goes through psychology—biotropes on the one hand and sociotropes on the other.

When the ninth edition of *American Men of Science* came out—the first edition that had more than one volume—there were three volumes: one for the *Physical Sciences*, one for the *Biological Sciences*, and one for the *Social and Behavioral Sciences*. The Editor's plan was to put the psychologists in this third volume and he added *and Behavioral* to the title at the instance of the psychologists who protested at being called social scientists. About 30 psychologists asked to be put in with the biologists, and their biographies appeared in both Volumes II and III.

Now the tenth edition is about to begin appearing, a much larger listing than the ninth. It will come out in five successive volumes. A committee decided to combine physics and biology and to put these sketches under one alphabet in the first four volumes. A-E of *The Physical and Biological Sciences* should appear this year. Then a separate fifth volume will cover *The Social and Behavioral Sciences* and include psychology. This arrangement is probably best. Even the biotropes among the psychologists probably think of themselves as behavioral scientists—most of them do. To have put everyone together in one alphabet in five volumes would have cost everyone who wants the work on his shelves between \$55 and \$60. (The early volumes are \$11 each if you pay far enough in advance; the fifth volume is likely to be a little more when it comes out in 1962. The after-publication price of the five volumes to persons who are not included in the volumes will be well over \$100.)

Nevertheless those biotropes who dread infection from too close association with sociotropy have a remedy. They can write to *American Men of Science*, Ari-

zona State University, 820 College Avenue, Tempe, Arizona, and ask to be listed with the physicists and biologists and the shift will be made, provided they write in time. More than this, they can ask to have in Volume V a cross reference to the earlier volumes if they have been shifted there. It is hard to see how *American Men of Science* could have been more generous, faced, as it was, with the necessity of dividing a continuity. King Solomon met a similar problem in not so different a manner.

If you are a strong biotope and the alphabet puts you between Aalto and Eysenck, you had better write at once, and even now it may be too late. Fabian to Zwikstra can be more deliberate. But why not decide about your character at once, write the AAAS, and relax?

#### VIPS' COMPENDIA

Often psychology's VIPs scatter their contributions through the year among many different journals and volumes. Sometimes a crucial paper is almost lost in a special obscure commemorative volume, like Tolman's 1936 paper which introduced intervening variables to a waiting world and then hid them in the University of Southern California's *Proc. 25th Anniv. Inauguration of Graduate Studies*. (Whoever'd think of looking there for an intervening variable neonate?) Littman (*CP*, Dec. 1958, 3, 357) has mentioned the American volumes that bring together Cattell, Thorndike, Tolman, and Woodworth. Cattell hardly existed as a unitary Gestalt until this volume showed him whole. There may easily have been other volumes of this sort for other American psychologists, but at any rate the present years is notable for three extremely useful *gesammelte Abhandlungen*.

First there is L. L. Thurstone's *The Measurement of Values*, which, with assistance from Thelma Thurstone, former graduate students, the University of Chicago Press, and finally the Ford Foundation, was published in April 1959. It is divided topically into three parts and consists altogether of 27 papers published in the 30 years 1927–1956–19 of them in the sexennium 1927–1932. They come from all sorts

of places—like the *Psychological Review* and the *Proc. Second Conf. Research of the American Meat Institute*. Later *CP* will print a comment by another psychophysicist on the historical place of Thurstone's contribution in the history of psychological measurement.

Next there is B. F. Skinner's *Cumulative Record*, 30 papers ranging from 1931 to 1958, the product of 28 years arranged under eight topics and put out by Appleton-Century-Crofts last spring. The publisher's blurb shows a learning curve with variable reinforcement, positively accelerated, which by 1958 had—for these 30 papers but not including the six books—reached 160,000 words. May one extrapolate to 1970? Hardly, though the analogy with Wundt is tempting.

Then finally there is *The Neuropsychology of Lashley: Selected Papers*, which McGraw-Hill will publish late this year (or at the latest early in 1960). It is the reprinting of 29 of Lashley's papers published over the 34 years from 1917 to 1950. The selections were made by an editorial committee, consisting of C. T. Morgan, F. A. Beach, D. O. Hebb, and H. W. Nissen, and there are two prefaces, one by Stanley Cobb and the other by E. G. Boring. The order is chronological and you can see the conception of brain action moving over from the negative of no fixed localization to the positive of field theory as the years go by.

It is good to have these three VIPs collected—definitive monuments for two of them and a growing tree for the third. And who is a VIP? He is, in this context, a research psychologist who in 30 years has published 30 papers which at the end of the time mean something significant in psychology and needed to be ordered within hard covers, all together, so the full import of each will become apparent.

—E. G. B.



*Respect for the things of experience alone brings with it such a respect for others, the centers of experience, as is free from patronage, domination and the will to impose.*

—JOHN DEWEY

# Gifts for the Gifted

Willard Abraham

*Common Sense about Gifted Children.* New York: Harper & Brothers, 1958. Pp. xii + 268. \$3.75.

Norma E. Cutts and Nicholas Moseley

*Teaching the Bright and Gifted.* Englewood Cliffs, N. J.: Prentice-Hall, 1957. Pp. xiv + 268. \$4.25.

Robert F. DeHaan and Robert J. Havighurst

*Educating Gifted Children.* Chicago: University of Chicago Press, 1957. Pp. ix + 276. \$5.00.

Nelson B. Henry (Ed.)

*Education for the Gifted.* (Fifty-seventh Yearbook of the National Society for the Study of Education, Part II.) Chicago: University of Chicago Press, 1958. Pp. xi + 420 + vii. \$4.00 (cloth), \$3.25 (paper).

*Reviewed by D. A. WORCESTER*

*Dr. Worcester is Professor Emeritus of Educational Psychology and Measurements at the University of Nebraska and is just now Visiting Lecturer at the University of Wisconsin. He has recently reviewed Anastasi's Differential Psychology (CP, April 1959, 4, 111f.). He has long been especially interested in special education for the retarded, the handicapped, and the gifted.*

AFTER an incubation period of three or four decades during which a few persons and a few communities urged insistently that there be special educational programs for individuals of high ability, there has been a sudden and tremendous blooming of interest both among professional educators and the public in general. This blooming—or boozing—was well on its way before Sputnik, but that satellite gave it the added thrust to put it definitely into orbit. Some individuals have become almost frenzied about the matter. Really to beat Russia we shall have to use our brains and, of course, the real purpose of living is to beat Russia. Therefore

we must develop our brains. Although at first the new urge was largely directed upon the production of scientists and technologists, it was soon recognized that talent in every field is in short supply. Also there came the realization that the efficient development of talent of any kind requires specialized training. So the age of the glorification of the average seems now to be giving way to the appreciation of diversity.

The speed with which this change has come about is almost alarming to the very persons who, over a period of years, have tried so hard to bring it to pass. Professional education is not yet ready for it. Only an exceedingly small number of schools of education have made provision for the training of teachers of the gifted. In only a few instances has the attempt been made to evaluate the established programs for rapid learners, and in still fewer have the evaluations been adequate. Widely divergent opinions, frequently emotional ones, are held as to the worth of particular methods of educating the gifted, and the few facts so far avail-

able usually appear to contradict the strongest prejudices and are, therefore, accepted with reluctance. Schoolmen, then, are confronted with the demand that they do something and do it immediately without having either a trained staff or tested procedures to guide them.

It is to be expected that in such a situation, with both school administrators and classroom teachers grasping for any possible help, there should appear a spate of books designed to furnish the aid demanded. Four volumes have come out recently. It would not have been surprising if some of these books had been hurriedly thrown together by relatively uninformed persons to capitalize upon a ready market, but fortunately that is not the case in any of the works reviewed here. All of these authors are capable. All are students of developmental psychology. All have worked with the gifted. All write from a genuine interest in sound educational procedures. Of course, they do not always agree nor are they entirely free from prejudices.

Of the four books which will be reviewed here, three are systematic treatises written by an author or a pair of authors. They will be treated, more or less, as a unit. The *Yearbook* will be discussed separately.

**T**Hese first three volumes have many things in common. They all call attention to the need for special opportunities for the gifted, to the means of identifying the gifted; to the arguments for enrichment, the arguments for and against acceleration, to the possibilities of the use of community resources, to the need for understanding by the parents, to the special qualifications that the teachers should have. All these books have suggestions for things which can be done in the classroom. All describe special programs, and all give a considerable number of references. Two of them—Abraham is the exception—classify their references and list test materials. Cutts and Moseley include references of methods of teaching and suggest needed research. DeHaan and Havighurst name organizations which are devoted especially to the gifted.

There are striking differences in the

ways in which the books are written. Abraham, who has conducted some very successful workshops on the gifted at Arizona State College at Tempe, is avowedly speaking to the lay public and parents as well as to the educator. His style is a cross between that of the evangelist and the feature writer. (In fact he was a feature writer at one time.) He is particularly, though not exclusively, concerned with students of junior-high-school age and beyond. His is a call for ACTION. He gives many descriptions of what has been done in various places and detailed suggestions for what parents, schools and communities can do. His plea is supported by substantial information, although, in the opinion of the reviewer, he has not analyzed as completely as he might all of the studies which he cites, and he has been overimpressed by some of the excited demands of persons who are not expert in the field. Abraham's common sense is based, however, as indeed it should be, upon generally sound thinking, and his manner of writing will undoubtedly lead many to read the book who would not finish a more conventional text. And they will read to their profit.

Cutts, of the New Haven State Teachers College, who has been engaged for many years both in practical work with exceptional children and as a teacher of teachers, and Moseley, an experienced educational consultant, write in the first and second person. They are talking to teachers about the children in their classrooms. They help teachers to identify and to understand those children in their charge who will profit from special procedures. They describe their own experiences with various procedures and make suggestions about what 'you' can do. They are particularly concerned for the underachieving pupil, about avoiding mental health hazards and in promoting character development. They also emphasize the importance of educational and vocational guidance for the gifted. Their treatment of acceleration is the best of any of those three volumes. Especially will teachers in service be pleased with this book.

DeHaan, of Hope College, Michigan, and Havighurst, of the University of Chicago, write like college professors.

Their style is formal, the organization of material is methodical. Much of their text is the result of surveys of practices in which the authors have themselves participated, of experiences in the Quincy, Illinois, project and as consultants to other school systems. Their book is more comprehensive than either of the other two. They treat most of the major issues and practices that concern the gifted. The matter of acceleration is not handled as well as are most of the other topics. Several case studies are included. The authors do not particularly emphasize such subjects as character development and guidance, but they do give attention to the administrative problems involved in programs for the gifted—a topic which is of great importance and which is frequently omitted from treatises of this kind. There is also an excellent chapter on creativity. This book will probably be preferred in most university classes.

THE *Yearbook* under consideration brings together in its eighteen chapters the reports of a large number of persons, many of whom have made major contributions of their own to studies of the gifted. Mention cannot be made here of the individual offerings. For the most part the writers have excellently fulfilled their tasks, and the reader will find here a very valuable source book. The modern point of view toward the gifted is well presented. Some readers will be surprised to learn from the historical sketch that few of the current proposals are new. The characteristics of the gifted, the special difficulties which are likely to confront them, their need for guidance, the need for community cooperation are well covered. There is an excellent chapter on motivation. Some of the students of this reviewer have been delighted with suggestions on creativity and have used them successfully in their classes.

Descriptions of many schemes for providing for the gifted at all levels from elementary schools to the college and university not only inform the reader about what others have tried to do but yield valuable aid to those who are considering establishing a program. For the latter purpose administrators

will find very useful discussions concerning the organization of a plan, including estimates of costs.

Although the areas covered by the *Yearbook* are well covered, there are, nevertheless, some serious deficiencies which leave the presentation as a whole highly prejudiced. The provision for the gifted which has been the most common in the past and is, indeed, still most common is acceleration. A considerable amount of research has been directed towards the evaluation of acceleration—more than has been undertaken on any other type of special provision. Nevertheless there is no chapter on acceleration and none of those who have made contributions in this area are included in list of authors. Passow, to be sure, mentions quite a large number of studies on the topic and states "that the weight of experimental evidence tends to support the position of academic gains through acceleration of the gifted student at all levels. Research into the effects of acceleration on social and emotional adjustment has generally demonstrated no serious detrimental results." And later he says, "On the basis of available research there appears to be no issue. . ." This discussion is, however, embedded in a chapter entitled *Enrichment*, and Passow does not mention acceleration in his conclusions.

Norris, in her *Programs in the Elementary School*, has a brief section on acceleration. She says, "There are many arguments for acceleration, and just as many against it." Then, without analyzing the arguments but having said more for acceleration than against it and having mentioned a couple of studies which show good results from acceleration, citing no study which shows negative results, she summarizes the programs that she has reviewed, apparently with approval, remarking, "There is little or no acceleration."

Other lacks of the *Yearbook*, in this writer's judgment, lie in its mission of special treatment of the underachieving gifted and consideration of the family's function and problems in the education of the gifted. These are highly important matters, matters which not infrequently become critical. DeHaan and Havighurst give at least some attention, though perhaps not enough, to these

topics, and Havighurst was Chairman of the *Yearbook* committee.

It is always difficult in a cooperative enterprise such as this, to keep clear the divisions of responsibility. Perhaps editors hesitate to interfere with the muse of individual writers. In this instance there is a great deal of duplication among the papers presented. One feels that a great deal of time could have been saved for the reader and a higher degree of interest maintained had there been more efficient editing. Nevertheless recognizing that there are large

gaps which must be filled from other sources, this reviewer has asked the students in his class to study this book.

Each of the four volumes treated in this review has value. None gives all of the answers. It is to be hoped that many of the educational programs for the gifted now getting under way will be progressively evaluated so that opinions may more nearly become facts. Detailed suggestions as to designs for the evaluation of educational programs would have increased the worth of any of the books mentioned.

false position when he testifies in court. Psychiatry, as a science of human behavior, must be deterministic. Granted this, argues Roche, the psychiatrist can know nothing of such concepts as *mens rea*, responsibility, or free will. Without these concepts a legal system, based upon morality, cannot operate. Without a moral justification for punishment, the contemporary rationale for judgment would disappear.

Roche's analysis of the problem is clear enough, although not novel. The difficulties of the scientist, *qua* scientist, when dealing with decisions defined in an ethical framework are depressingly familiar. In suggesting solutions, however, the author presents us with a *non sequitur*. His answer to the problem is that communication between the two disciplines should be improved. This improvement is to consist of an acceptance by the lawyer and the psychiatrist of the principle that "the real world is unconsciously shaped and colored by our language habits which predispose certain interpretations." By the same token, it is held that there will be no solution "as long as traditional criminal justice continues as an autonomous system of supernatural concepts, which cannot be defined in terms of experience." While it is true that, should the concepts of criminal law be changed so as to agree with those customarily in use in psychology, there would be better communication between the two professions, Roche is incorrect in pointing to poor communication as the cause of the problem, for it is, rather, the symptom.

Between a profession which requires that people be judged as responsible for their behavior, and one which assumes that responsibility is a meaningless concept, there is more than a confusion of language. There is a clear difference in beliefs which cannot be dissolved by semantic analysis. On the contrary, the more clearly the lawyer understands the point of view of the psychiatrist, and *vice versa*, the more obvious becomes the reality of the differences which separate them. Given this insight, Roche's solution emerges, not as a plea for better language habits, but as a demand that the law move from a moral to a psychological foundation. Quite prob-

## A Judgment Come to Daniel

Philip Q. Roche

*The Criminal Mind: A Study of Communications between the Criminal Law and Psychiatry.* New York: Farrar, Straus and Cudahy, 1958. Pp. xi + 299. \$5.00.

Reviewed by BRENDAN A. MAHER

Dr. Maher is of British origin with an AB from Manchester but a PhD from Ohio State University in 1954. He has taught at Ohio State and Northwestern Universities and is now Associate Professor of Psychology at Louisiana State University. In England he was psychologist in H.M. Prison, Wakefield, and his chief interests lie in penological and physiological psychology and the psychology of personality. He reviewed Schwartz's book about Janet for CP (May 1957, 2, 139) and Delay's French discussion of modern psychiatry (July 1957, 2, 187f.).

THE trial of Daniel McNaghten, which raised in 1843 the question as to whether a mentally incompetent person is responsible before the law, continues to bedevil the treatment of the modern murderer in a manner which the House of Lords could neither have preferred nor predicted. In a century in which society could, and did, hang children for stealing, the central issues in a criminal trial were the proving of guilt and the fixing of responsibility. The personal responsibility of an individual for

his behavior was axiomatic in the law, in the sense that proof of its absence in the accused lay as a burden upon the defense. If this defense failed, the prisoner would be punished—the punishment being established as fitting the crime regardless of whether or not it also fitted the criminal. In many cases, indeed, it appeared to unfit the criminal for anything other than further crime.

Dr. Roche has had extensive experience in the field of forensic psychiatry, and he has approached the problems of criminal behavior from a standpoint which is chiefly psychoanalytic. This book is an elaboration of the lectures delivered by him at the University of Michigan, as fifth winner of the Isaac Ray Award of the American Psychiatric Association. The purport of his lectures is to analyze the issues dividing psychiatry and the law, mainly with regard to the application of the McNaghten Rules, and to suggest some remedies. His analysis proceeds from the premise that the legal situation (described in the preceding paragraph in the past tense) has propelled the present tense psychiatrist (in both senses of the adjective) into a

ably few of his psychologist readers would quarrel with this injunction, but the exact nature of his solution has been obscured by his definition of the problem in terms of communication.

Morality, at least the morality of the criminal law, is, for Roche, a primitive adherence to pre-scientific thinking about human behavior. The conflict is not really between psychology and morals, it is between 'good' psychology and 'bad.' Society, suggests the author, ought to abandon the lawyer's (erroneous) psychology and accept the psychiatrist's—presumably the psychoanalyst's. Here again it is probable that most psychologists would assent to the proposition that human affairs should be managed more scientifically, but propositions which include 'ought' and 'should' require careful scrutiny. If it is argued that morality is simply a rather poor psychological concept, then categorical imperatives are relinquished. Contingent imperatives derive their force from satisfactory evidence that psychiatric treatment of the criminal secures society's aims more effectively than penal treatment. To the extent that society aims to rehabilitate the criminal or prevent crime, psychiatric treatment may well be more effective than punishment per se. The validity of this hypothesis can be investigated, although the evidence in its favor is so far lacking for want of test. If society desires revenge, then punishment may be more appropriate, and it is not for the amoral scientist of human behavior to make judgments about the morality of society's wishes. He has ruled himself out of court in more ways than one.

**A**LTHOUGH Roche's treatment of the problems of determinism and the law is superficial and inconclusive, his strictures regarding the application of the *McNaghten Rules* are impressive and forceful. Ambiguities of wording in the rules have bothered lawyers as well as psychiatrists for many years. Reading the case histories with which the author illustrates his arguments, one is confirmed in the conviction that something is wrong somewhere. Death at the hands of the common hangman, devoid of drama or dignity, seems to be one last

injustice with which we destroy those whom we have first made mad.

But it is, at least for this reviewer, the awareness of *inhumanity* which moves us to protest, not the feeling that capital punishment is psychologically invalid. Capital punishment could be evaluated as a 'therapy' for individuals or society in just the same manner as any other therapy. Sometimes the law, rather paradoxically, has implicitly evaluated it in this sense. Roche

tive treatment of the already convicted prisoner. The psychopathologist would abandon the role of expert witness in the public trial and restrict himself to those opinions which he is qualified to offer, namely, opinions as to the probable effect on the prisoner of a given manipulation of the environment. It is for such a definition of the psychiatrist's role that Roche pleads. His criticisms of the trial-psychiatrist are cogent and well documented. The ease with which psychological testimony may be made to appear ridiculous in cross-examination, the gradual growth of defense-psychiatrists and prosecution-psychiatrists, the dangers of the hypothetical question, are among the many problems which have developed from the necessity of using public testimony in accordance with the requirements of *McNaghten*. All in all, Roche deals with the practical question of how psychiatry can best help the law more effectively than he deals with the fundamental moral issue.

This reviewer wishes that Roche could have communicated his ideas in simpler prose. Neologisms are not infrequent, *ludic* (make-believe) and *agonal* (painful) being especially prominent. As the latter already has specific navigational and religious meanings, its use in this book comes close to being a solecism. There is a good deal of avoidable verbosity, as witness such statements as "Towards the end of the expertise, however, and with the fugitive verbal abstractions introduced by cross-examination, the original medical facts tended to get lost in a maze of semantic ambiguity." Authors in glass houses—

The psychologist reading this book will find little to stimulate his thinking about psychology. He will probably develop some sympathy for the psychiatrist in the witness stand and may wince to think of himself defending Rorschach interpretations before a sceptical attorney. As a scientist, who also considers the moral implications of the effort to predict and control human behavior, he will perhaps find Roche provocative; though not so disquieting as *Erewhon*.



PHILIP Q. ROCHE

quotes the case of a convicted murderer who developed 'insanity' between conviction and the date set for execution. The sentence was commuted on the grounds that the prisoner "could not know what he was being hanged for. . . . Thus it could not be a lesson to him." Apart from noting that the officials concerned would fail in at least one item on the Stanford-Binet scale, this grimly ludicrous incident underscores the fact that the concept of therapy is fundamentally moral. It rests upon the assertion that life is better than death, and that health is better than sickness.

In the framework of Roche's arguments, the only tenable position for a determinist is to reject the legal concept of insanity, not to improve it. When this is done, the psychopathologist can aid society in its dealings with criminals by suggesting the most effec-



# The Wechsler Waxes

David Wechsler

*The Measurement and Appraisal of Adult Intelligence.* (4th ed.) Baltimore: Williams & Wilkins, 1958. Pp. ix + 297. \$5.00.

Reviewed by READ D. TUDDENHAM

*Dr. Tuddenham is Associate Professor of Psychology in the University of California at Berkeley and Research Associate in its Institute of Human Development. He says he has been influenced in his work for the doctorate at California by Robert Tryon and Jean Macfarlane, and certainly the effect of the latter appears in his concern with longitudinal studies in the Guidance Study—age changes in physical growth and in reputation of children, personality ratings over two decades. He knows something about factor analysis, too, and is a Diplomate in Clinical Psychology.*

DAVID WECHSLER's classic, *The Measurement of Adult Intelligence*, appeared first in 1939. In the subsequent two decades, the Wechsler-Bellevue examination which it launched has become perhaps the most widely used of mental tests, and its author one of the best known of clinical psychologists. The increasing intervals between the successive editions of the book—two years, then three, and now fourteen—seem superficially to fit Wechsler's famous curve of intellectual decline, but other facts make him a prime argument against his own hypothesis. Since 1944 he has found time, in addition to his regular duties as chief psychologist at Bellevue Psychiatric Hospital and on the staff of New York University, to be a consultant to the Veterans Administration, to serve on many boards and committees of the American Psychological Association and as president of its Division of Clinical Psychology, to author several research contributions, and to produce three major tests, the Wechsler-Bellevue form II, WAIS, and WISC.

The new fourth edition is a far more thorough revision than those that pre-

ceded it, with even the title undergoing expansion. Changes in content reflect the now-established status of the Wechsler tests. No longer included are the old chapters on the need for an adult-intelligence scale and on limitations and special merits of the instrument. Missing, too, is the long section on test procedures and scoring, its purpose served instead by the excellent manuals published in collaboration with the Psychological Corporation for each of the new tests.

New are chapters on the factorial composition of W-B I and WAIS, on age-changes in intelligence, and on sex differences. In addition, there are special chapters on the clinical evaluation of brain damage and on the use of the tests in counseling and guidance. Throughout the volume there is considerable rewriting and expansion of particular sections, and a consistent integration of findings on WAIS with the older material on W-B I. No mention is made of W-B II, nor of WISC.

TEST constructors suffer from a persistent itch to specify the nature of intelligence, perhaps because they seldom succeed even to their own satisfaction in expressing the elusive connotations and distinctions involved. Wechsler is no exception. His greatly expanded chapter on the topic contains numerous wise and quotable sentences, but, owing perhaps to the splicing of old and new paragraphs, it is not as lucid as it might be. The embarrassing truth is that, after fifty years of 'clarification,' intelligence as a concept remains muddled, in spite of the enormous popular success of tests purporting to measure it.



DAVID WECHSLER

Wechsler has not changed his position on the fundamental issue. For example, he has modernized his definition of intelligence as an aggregate or global capacity to act purposefully, etc., only by adding the phrase "operationally defined." Operational or not, this formulation, like most such, is too all-embracing to help much in evaluating specific test content.

In another place, he describes intelligence "as an effect rather than a cause, a resultant of interacting abilities—non-intellectual included," and distinguishes between intelligence (adequacy of functioning) and intellectual ability (capacity to function). The specification of intellectual abilities, he thinks, is the task of factor analysis. Intelligence cannot, however, be inferred directly from summations of factor scores, both because it involves complex interactions among abilities and because it comprises such non-intellectual components as drive and experience. Although Wechsler regards factors as real—"factors are facts, not just theoretical categories"—there are too many of them (and too many ways of calculating them) for factor analysis to constitute an ultimate answer to the resolution of intelligence into its components.

Where does this leave us with respect to the construction of intelligence tests? Our choices of content must be founded on judgment and experience. Wechsler thinks his scales measure general intelli-

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THIS new and provocative interpretation of educational psychology presents an overview of the field; discusses tests and measurements in their relationship to a better understanding of the individual pupil; deals with the teacher's personal relationship with the student; and discusses the personality of the teacher. Accompanying the text is a *Student's Workbook* which contains review exercises; problems; projects and annotated bibliographies. 535 pages, illus., \$6.00. Student Workbook for Educational Psychology. 138 pages, paper, \$1.90.

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THIRD  
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A BOUT one-third of the material in this edition is entirely new. The remaining material has been thoroughly revised and brought up to date. In comparison with earlier editions, there is more emphasis on personality development, including the work based on psychoanalytic approaches to child study; more stress on theory, especially the ideas of Piaget and Erickson; and more emphasis on the adult years. Moreover, a consistent theoretical emphasis ties the various sections together better than they were in the earlier editions. 552 pages, illus., \$6.00.

*Appleton-Century-Crofts, Inc.*

35 West 32nd Street, New York 1, New York

gence, and most clinicians would agree. He concedes they do not measure all that goes to make it up. "The only thing we can ask of an intelligence scale is that it measure sufficient portions of intelligence to enable us to use it as a fairly reliable index of the individual's global capacity." But what is sufficient? How may we determine whether the test is not only a long enough but also an ecologically representative enough sampling of the demands for intelligence imposed by our physical and cultural milieu? There is no real criterion, but only Spearmanites would expect so much from ten or eleven item-types selected on other grounds. Absence from the factorial data of several commonly identified factors suggests that the Wechsler scales cover none too thoroughly even the more limited domain of general intelligence tests.

PERHAPS the most interesting chapter for the general reader concerns changes in intelligence with age. Wechsler's report in his first edition of a systematic decline in tested adult intelligence, following a maximum between 20 and 25 years, was at once a *raison d'être* for the Wechsler-Bellevue scale and a research finding of the greatest significance for gerontology and for society generally. Wechsler's data confirmed earlier cross-sectional studies on aging (e.g., Jones and Conrad, 1933), and his conclusion was generally accepted that detectable mental deterioration in human beings begins in early adulthood and parallels decline in such anatomical and physiological characteristics as brain weight and vital capacity.

This view has recently been challenged by Bayley (1955) and Owens (1953). These workers found clear evidence that abstract and verbal skills, at least among the intellectually superior, continued to increase up to age 50, and perhaps longer. Equally serious for Wechsler's contention are his own findings, reported in the present edition, that on WAIS the maximum is not reached until 25-29, and that the decline is appreciably less marked up to age fifty than he previously believed.

Wechsler attempts a conscientious reconsideration of the problem, but in this

reviewer's opinion dismisses much too summarily the argument that cross-sectional data provide an insecure basis for longitudinal inferences. For example, the difference between the older and younger generations, which Wechsler attributed to biological decline, was observed in the comparison of World War I and World War II soldiers tested at the same age (Tuddenham 1948).

There can be little doubt that Wechsler's age curves are correct as descriptions of the mean level of test performance in different age brackets of today's population. The observed phenomenon can, however, be as readily explained by secular changes in the education, the test sophistication, and the health of the samples compared, as by the decline in some biological substrate of the test score.

Wechsler is reluctant to abandon his earlier position. He states flatly that most intellectual abilities decline with age and at a systematic and linear rate. General intelligence, however, "as evaluated by pragmatic criteria," appears to maintain itself unimpaired over a much greater portion of adult life and to decline at a much slower rate than do the mental abilities by which it is measured. In this context, Wechsler seems to imply that his test measures intellectual abilities which decline, not intelligence, some of whose aspects (e.g., sagacity) may actually increase. A vagrant question arises whether tests which show increases are thereby better measures than Wechsler's of intelligence in older people. In any case, those now entering the middle years seem entitled to face their futures with considerably more equanimity than could the corresponding age group in 1939.

HERE are many novel features in this edition. Noteworthy among them is a stimulating discussion of sex differences

in intelligence, and a method for scoring psychological masculinity and femininity based on differences between subtest scores. The value of such scores is not established.

The writing of the clinical chapters is somewhat more cautious than heretofore but not fundamentally different. Minor changes have been introduced in the calculation of deterioration ratios. The controversial 'sign' lists for psychiatric syndromes are carried over almost without alteration, despite a vehement disclaimer of them as patterns. The volume concludes with an excellent chapter on changes in intelligence consequent to brain damage, and a somewhat thinner discussion of the applications of the tests in counseling.

In reading the last section of the book, the reviewer's reservations about ratios, 'signs,' and the like did not diminish his admiration for the clinical wisdom and rich experience which illuminate Wechsler's discussion of specific cases and responses. Wechsler describes himself as "a reformed but unchastened Spearmanite." On the evidence of this volume he might also have described himself as a reformed but unchastened clinician—and for this, several thousand clinical psychologists deeply in his debt should be profoundly grateful.

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*Only statements based on measurements are reliable. The corollary is: statements without measurements are not worth listening to. This belief is strengthened by the fact that wherever measurements are introduced most previous statements are shown to consist of illusions and delusions or to be quite meaningless.*

—E. W. SCRIPTURE

# Difference Equations for Behavioral Sciences

Samuel Goldberg

*Introduction to Difference Equations: With Illustrative Examples from Economics, Psychology, and Sociology.* New York: John Wiley & Sons, 1958. Pp. xii + 260. \$6.75.

Reviewed by C. J. BURKE

Dr. Burke is Professor of Psychology at Indiana University, having been there at the various professorial levels for the past decade. He has a PhD from the University of Iowa and long before he was employed in actuarial research, a background which may have something to do with his present interests in psychological statistics and measurement and the use of mathematical models in psychology.

DR. GOLDBERG, who is Assistant Professor of Mathematics at Oberlin College and who has had for some years a special interest in difference equations in the social sciences, has provided in this volume a concise, well-organized discussion of the types of difference equations which occur most frequently in contemporary psychological theories. The experimental psychologist who wishes to understand or extend the linear models used in current theorizing about such phenomena as learning or communication will find that Goldberg serves him well. Certain sections of the book can rescue the mortgagee who has mislaid his contractual records during the count-down for income tax returns.

The book is an introduction to the calculus of finite differences with a wide selection of illustrative material from the social and behavioral sciences and with special emphasis on the solution of difference equations. Briefly put, the solving of a difference equation is the recovery of a function from information about discrete changes in the function just as the solving of a differen-

tial equation is the recovery of a function from information about continuous changes in the function. Learning theorists often assume that changes in response probability occur discretely with the reinforcing event on each trial and specify rules for calculating trial-to-trial changes in response probability. These rules are stated as difference equations and the solution of the difference equations gives the desired mean learning curve.

The content of the book follows a brief opening section which illustrates the concept of a difference equation and is divided into four chapters. In the first chapter the fundamental mathematical concepts of *function* and *operator* are introduced, the *difference operator* and *displacement operator* are defined, and the algebra of the system resulting from the addition of these two operators to the real numbers is developed. The second chapter describes the concepts of *linear difference equation*, *solution of a difference equation*, and *sequence*. Following a discussion of the fundamental existence and uniqueness theorems on solutions of difference equations, the linear first-order difference equation with constant coefficients is dealt with in great detail and applied to a number of concrete problems. In the third chapter, the linear difference equation of  $n^{\text{th}}$  order is discussed. Theorems leading to the general solution in the case of constant coefficients are presented and certain slight extensions are made to sets of simultaneous linear difference equations. The second and third chapters rest entirely on the method of the charac-

teristic polynomial. The fourth chapter takes up a miscellany of interesting topics, including the application of generating functions and matrix methods to the solution of problems in difference equations.

The credit column is solidly filled. Goldberg has succeeded in presenting the material simply and adequately. Underlying mathematical concepts are clearly described. In the various sequences of theorems which lead to solutions of different aspects of the general problem, the individual theorems are carefully chosen and well stated. These theorems give successful emphasis to the most important concepts and provide, in each case, a relatively easy pattern leading, step by step, to the significant conclusion. The value of Goldberg's book for reference purposes is enhanced by his habit of collecting useful results in summary form, as in Table 3.1 (p. 146) dealing with special forms of particular solutions. The illustrative examples are broadly chosen and those from the psychology of learning are drawn from alternative linear models with a nice impartiality. Enough problems are provided to give the reader extensive practice in applying the techniques offered in the text. The expository writing is excellent throughout.

THE debit column is sparsely populated. There is a dearth of problems which serve as incentives for the reader to extend the results of the text. The importance of finding solutions which are general enough to include all particular solutions as special cases is delineated, but the discussion of this fundamental topic could well be expanded and emphasized. Finally, Goldberg has not entirely avoided the plague of writers of simple texts in mathematics —the necessity for unimpeachable statements without the abstract background context which makes necessary qualifications meaningful. What, I wonder, will the tyro make of the parenthetical statement on page 191: "This termwise multiplication and addition of series, although not generally valid operations, are permissible for power series"? In all fairness one must admit that examples of this kind of difficulty are hard

to find and that their sparseness attests to the quality of the organization and writing.

How does Goldberg's book compare with other books over the same material? For its limited purposes, it impresses me as the best book I have seen. But, against such encyclopedic treatises on finite differences as Jordan's *Calculus of Finite Differences*, the comparison cuts with both edges. The Jordan notation is more forbidding, its exposition is more turgid, its proofs are less clear and often less adequate, and its layout is less attractive for purposes

of study. Yet, even with respect to the topic of difference equations alone, its coverage is more extensive.

The material of Goldberg's book is important in contemporary experimental psychology. The book, supplemented perhaps by Richardson's little book on finite differences, can make the material accessible to many who cannot dig deeply into the comprehensive treatises. Nevertheless, if one does not mind the calluses and extra hard work, his book dollar will go further in one of the standard references on finite differences.

be less frequent if the title of the printed volume had begun more modestly with *Some Current Trends*. . . .

Four lectures deal with problems from general experimental psychology. Donald B. Lindsley's *Psychophysiology and Perception* (pp. 48-91) is the longest chapter in the book and well worth it. He describes the way in which recent advances in neurophysiology and new concepts of brain function have made possible a psychophysiological attack on complex behavioral functions and illustrates the fruitfulness of this approach from his own program of research on perception. Vincent Nowlis, in a lecture, *On the Use of Drugs in the Analysis of Complex Human Behavior with Emphasis on the Study of Mood* (pp. 92-119), seems to promise a systematic treatment of the use of drugs for the experimental analysis of mood, but it does not come off. He contents himself with a brief statement of the drug-mood research at the University of Rochester, attempts a definition of mood, and then proceeds to a discussion of the control of mood in studies of communication and persuasion. Charles N. Cofer lectured on *The Mediation Hypothesis in the Analysis and Description of Behavior* (pp. 120-141). He presents a stimulating discussion of organization as a characteristic of behavior, especially verbal behavior, that seems to require mediating responses as hypothetical constructs, considers briefly some contemporary approaches to the study of mediation, suggests that a taxonomy of mediating responses is needed, and concludes, in effect, that progress on many fundamental questions in learning and performance will be paced by our progress in understanding the mediating processes in behavior. The final lecture in the 'general experimental' area, by John B. Carroll, considers *Process and Content in Psycholinguistics* (pp. 175-200). He makes an important contribution to the conceptualization of linguistic encoding and decoding as an essential aspect of the experimental analysis of concept evocation, perception, and discrimination; and he urges—and illustrates from his own studies—the rewarding enlightenment that comes from the cataloging of content, rather than from attempts at analysis of process.

## Methodological Potpourri, Variously Spiced

Robert Glaser, Joseph Zubin, Donald B. Lindsley, Vincent Nowlis, Charles N. Cofer, Harold Guetzkow, John B. Carroll, Roy M. Hamlin, and Thomas M. French

*Current Trends in the Description and Analysis of Behavior.* (Nine lectures under the auspices of the Department of Psychology in the College of the University of Pittsburgh, 11-12 Mar. 1955 and 8-9 Mar. 1956.) Pittsburgh: University of Pittsburgh Press, 1958. Pp. 242. \$4.00.

Reviewed by ARTHUR W. MELTON

Dr. Melton has been since 1957 Professor of Psychology at the University of Michigan, after a long period of working for the U. S. Defense Department and then the Air Force on training, research, and development. Earlier identified with research on learning and retention, he is now Editor of the Journal of Experimental Psychology and one of the most active and representative experimental psychologists in the United States. Add to that his long-standing concern with scientific methodology, and it becomes clear why CP wanted him to review this book.

HERE is another (the ninth) in the *Current Trends* series in psychology, sponsored and published by the University of Pittsburgh. It reports lectures delivered in March, 1955, and March, 1956. In the preface, Robert A.

Patton, speaking for the Committee of the Department of Psychology that selects the topic and the speakers, says that the committee "was interested in the general problem of measurement, since there is the continuous need for the development of methods to quantify the stubborn and elusive phenomena of behavior," and selected the title *Description and Analysis of Behavior*. All the lecturers present a description and analysis of behavior—some behavior—but not all of them seem to be under compulsion to speak to the methodological trends or breakthroughs in their selected areas of interest, and all areas of interest in psychology are not represented. Such is perhaps the necessary fate of a book of printed lectures, when the lecturers are given maximum freedom of topical development; but errors of reader expectation (Type II) might

There are two lectures in *social psychology*. Harold Guetzkow speaks right to the point of the topic of this collection of lectures in an analysis of the *Interaction between Methods and Models in Social Psychology* (pp. 142-174). He speaks to the ways in which social psychology has become increasingly self-conscious about method, the ways in which borrowed methods have resulted in a proliferation of new variables, and the ways in which theory has resulted in the elaboration of methods—a masterful systematic job. On a somewhat more limited topic, the *Descriptive Variables for the Study of Task-Oriented Groups* (pp. 1-21), Robert Glaser provides a succinct report of a descriptive system which was developed by him and his associates for the description and classification of a wide variety of military task-oriented groups (teams).

THE three lectures in the general area of *clinical psychology* cover the gamut of approaches therein. Roy M. Hamlin sketches, and produces lively commentary on, the trends in *Scientific Methodology in the Area of Psychopathology* (pp. 201-226). The four trends are: (a) increasing scientific scrutiny of psychotherapeutic procedures; (b) ever-more-critical examination of definitions and concepts; (c) the development and use of ever-more-public and objective methods of the observation and recording of behavior; and (d) the use of new and more objective research designs and techniques of data-analysis. He notes, however, that the proliferation of methods gives the impression of great confusion, that fear of methodological inadequacy seems to paralyze research, and that "reactionary editors" of the American Psychological Association's journals contribute to the impression of a meager output of objective studies. In a serious effort toward a sys-

tematic methodology, Joseph Zubin presents, explains, and illustrates a plea for *A Biometric Model for Psychopathology* (pp. 22-47). He makes a thoughtful case for the usefulness of a research model in which a taxonomy of behavior (both normal and abnormal) is developed in a matrix of which the rows are levels of observed behavior (Conceptual, Psychomotor, Perceptual, Sensory, Physiological) and of which the columns are stimulus classes (Idling State, Disturbances of Homeostasis, Inappropriate Stimuli, Appropriate Stimuli, Configural Stimuli, Signs, and Symbols). Thomas M. French finishes this group, and the book, with some statements about *Guilt, Shame, and Other Reactive Motives* (pp. 227-242). The general tenor of this lecture is that psychoanalysts once gave most attention to the "disturbing motives" (those which are repressed) and now are giving the proper attention to the analysis of the "reactive motives" (those that are responsible for the repression of disturbing motives—"the motives that inspire the censorship," p. 227).

The reviewer has no doubt that each of these individual lectures will be read by some psychologists with great interest, but no psychologist should buy or begin to read this book with the notion that he is to be instructed in all of the significant trends in the description and analysis of behavior as they occurred in 1955-1956, or even in the most significant trends. One puts down the book, however, with the notion that *some* very important trends have been presented, and that *some* very important, even though perhaps individual, notions have been presented which may well be a part of or a source of notable trends when we look backward ten years from now. If, therefore, the reader approaches the book cafeteria style—as indeed it was put together—he may fare well even though without a soup-to-dessert table d'hôte.



*It is not the obligation of the research worker to bow to the dictates of statistical theory until he or she has conclusively established its relevance to the technique of enquiry. On the contrary, the onus lies on the exponent of statistical theory to furnish irresistible reasons for adopting procedures which have still to prove their worth against a background of three centuries of progress in scientific discovery accomplished without their aid.*

—LANCELOT HOGBEN

## Let Teacher Tap the Unconscious

Edith Kramer

*Art Therapy in a Children's Community: A Study of the Function of Art Therapy in the Treatment Program of Wiltwyck School for Boys.* Springfield, Ill.: Charles C Thomas, 1958. Pp. xvii + 248. \$6.75.

Reviewed by LABERTA A. HATTWICK

who, with a PhD from the University of Iowa and twenty-five years as educational consultant for parents in the public schools of Winnetka, Illinois, and Houston, Texas, is now counseling, lecturing, and writing in Houston, alerting parents and educators where she thinks change in conventional patterns is needed. With Rose Alschuler, she is author of *Painting and Personality* (2 vols., Univ. Chicago Press, 1937).

HIGHLIGHTING the value of individualized guidance of children, based on an understanding of psychodynamics, this book is a tribute to what an art teacher, in an art classroom, can do. Miss Kramer has drawn her material from seven years of practical experience with 6- to 12-year-olds at the Wiltwyck School for Boys—a residential treatment home, which some may recall as the setting of the film, *The Quiet One*. These children are said to be less extreme, but of the disturbed, delinquent, city-type, described by Fritz Redl in *Children Who Hate*. "Fearful, hostile, conflicted and immature they lack adequate resources for satisfying relationships with peers or adults and are the prey of their own primitive and unsocialized impulses."

Tempora paints were found to be one of the best art media available for fostering emotional maturation in boys of this type and this age-range, and Miss Kramer gives skillful descriptions, complete with paintings—a number of them in color—of the gradual steps toward ego-consolidation achieved by several of

the children in her classes for art therapy. Throughout her presentation she stresses the importance of communication in art and in the therapeutic process and cites many significant instances of interplay between individuals and the group.

How does an art therapist differ from a psychologist and a psychotherapist? Miss Kramer makes a clear distinction and consistently demonstrates it with case-material. Clarity of expression and helpful illustrations are found in whatever she discusses: the function of the therapist, the therapeutic value of the group situation, the importance of the art folders, the importance of displaying work, how to achieve success in the subtle task of showing understanding and acceptance of a child's work without, for example, appearing to the child to take "a ghoulish kind of pleasure in the cruelty and aggression which is brought to light."

**D**ESPITE the genuine merit of this book, the reviewer believes that Miss Kramer might have accomplished considerably more had she expanded her theoretical framework.

Basic to the author's therapy are the concepts that (1) "painting constitutes not a simple gratification of aggressive impulses, but an attempt at mastering conflict," and that (2) painting, in contrast to dreams, permits mastery of conflict through sublimation (defined as "any process in which a primitive asocial impulse is transformed into a socially productive act"). Miss Kramer adds, "There is, at the root of all sublimation an instinctual renunciation, and every step toward further sublimation is paid for by further renunciation."

Sound as these concepts may be, they leave the unfortunate impression that all of our inner impulses are undesirable and that our main task, in dealing with them, is to 'overcome' them. It is difficult to see how any individual with such a view can learn to accept himself.

Jungian psychologists, expanding their focus from 'primitive asocial impulses' to the entirety of the unconscious, have come to see that the unconscious side of each individual holds a complementary, and therefore a compensatory, re-

lationship to his conscious side, and that when conscious and unconscious materials are brought together, as in the experience of painting, so that the unconscious can compensate for the one-sidedness of conscious mind, the individual is ready for a transition to a new attitude and an improved functioning in the external world. With this view, the unconscious is not to be renounced, but rather welcomed for its positive contributions to adjustment.

Adults who have profited from the Jungian approach are particularly grateful for the realization that the unconscious has something positive to contribute to their personalities. Children who are in the process of establishing

a healthy ego—particularly emotionally disturbed children who are having difficulty accepting themselves—should find it doubly reassuring to know that their promptings from the unconscious are not 'all bad,' but have something helpful, something trustworthy to bring them.

In some of the case material Miss Kramer presents—notably of Albert, of Matthew, and of Marvin—one feels that she is limited by her framework, and would profit immeasurably by an adaptation of the Jungian approach. With her theoretical framework thus expanded, I believe Miss Kramer could give us an even more rewarding second book on art therapy.

## How Skills Change as Men Mature

A. T. Welford

*Ageing and Human Skill.* New York: Oxford University Press, for the Nuffield Foundation, 1958. Pp. vi + 300. \$4.00.

Reviewed by JAMES E. BIRREN

*Dr. Birren, who was at Northwestern University before World War II and at the Public Health Service afterwards, has been, since 1953, Chief of the Section on Aging of the Laboratory of Psychology of the National Institute of Mental Health in Bethesda, Maryland. He is, in a way, Welford's opposite number. He reviewed John E. Anderson's Psychological Aspects of Aging (1956) in CP (Mar. 1957, 2, 82).*

**W**EFLORD'S 1951 book brought objectivity and scholarship into the research and thinking on aging and skilled behavior. The present edition is in many ways an extension and expansion of the earlier work. Whereas the first volume was limited to brief descriptions and results of studies carried out in the Unit for Research on Ageing at Cambridge, the present one desirably places both the earlier and recent research in a broader context of the work from other laboratories.

Although this book was written about "age and skill," it can be used by psy-

chologists—who may not be at all interested in aging—as a source of provocative experimental ways of studying basic psychological problems, e.g., the nature of short and long-term memory, the role of anticipation in behavior, the dependence of speed and accuracy upon the perceptual difficulty of a task, as well as the analysis of learning. Also, the experiments described offer those investigators interested in studying conditions like fatigue and the behavior disorders experimental ways of localizing the essential changes resulting from the condition in a complex chain of behavioral events.

To understand the organization of the book it is helpful to know that it is based upon the experience(s) of a ten-year research program on aging at Cambridge, England. The Nuffield Research Unit for Research into Problems of Ageing was attached to the Psychological Laboratory of Cambridge University from 1946–1956. During this period students and colleagues were involved in research on aging for various

lengths of time: Welford lists 23 members of the research staff and 2 fellows who were with the unit during the ten years. These staff members conducted investigations on perceptual, psychomotor, learning, and other problems, chosen because of their interests as well as for theoretical and practical considerations. Most of the work has been published separately as research articles in the journals, but the task remained for Welford as Director of the Unit to integrate them in book form.

**S**INCE the book is about aging and skill it is essential for a reviewer to ask what *aging* and *skill* meant to Welford and his staff. It is obvious in the studies that *aging* did not mean studying old people alone. The experiments included as subjects, adults of all ages, "young" and "old." Possible age differences between 30- and 40-year-olds were as interesting to the staff as those between 60- and 70-year-olds. *Aging* is used to imply changes in skilled performance associated with advancing chronological age during the adult years. The workers and the experiments are involved in a trilogy of relationships: (a) the nature of aging processes, (b) the bases of skills within the organism, and (c) the nature of environmental tasks of adults.

Welford considers the physical changes of the organism with age as given, and the research did not inquire into their bases but accepted them, on one hand, as natural independent variables to which the organism adapts, and, on the other, as limiting factors for performance of environmental tasks. In addition to the physical changes, repetition of environmental influences molds behavior with advancing age, and these forces interacting with the physical changes determines the performance of individuals of different ages. Now does all this really tell us what *aging* is in Welford's mind's eye? (The title of the book is *Ageing and Human Skill*.) Probably—since Welford would rather talk about skill and performance than about aging, and devotes 16 pages to a discussion of the nature of age changes in performance and 26 pages to the nature of skill. The zest and detail with which Welford de-



A. T. WELFORD

velops his ideas about skill suggests this is where he is most at home. The book is about age differences in skilled activities.

The word *skill* may imply to some that Welford is interested in the things people do with their hands to earn money. Welford is interested in skills of livelihood but *skill* means much more to him; skill is almost synonymous with the ubiquitous "behavior." Skills have these characteristics for Welford: "(a) They consist essentially of the building of an organized and coordinated activity in relation to an object or a situation and thus involve the whole chain of sensory, control, and motor mechanisms which underlie performance. (b) They are learned in that the understanding of the object or situation and the form of the action are built up gradually in the course of repeated experience. (c) They are serial in the sense that within the over-all pattern of the skill many different processes or actions are ordered and coordinated in a temporal sequence." Skill for Welford is thus largely learned although involving innate components. It also has a future: with increased skill an individual "acquires a greater ability to anticipate future data and to plan actions ahead, and at the same time the size of 'unit' of his performance increases."

Although Welford defines skill broadly, much of contemporary emphasis in American psychology is not stressed by

him. *Personality* for example is not even indexed, although many aspects of what might be called personality variables are included in the discussion. The unique motivational patterns of individuals and the personal symbolism of stimuli and events, however, are not of concern. Welford wants to know more about what men have in common than about how they differ. He wants to know something about man as a transducing, translating, and effecting system, and how the invariants of the system are transformed with age. His interests carry him more into information theory than into biology, or into the social sciences for a logical form within which to arrange his facts. Although he discusses the variability of subjects, he has little to say of the analysis of individual differences in the experimental findings. This choice will surprise American readers who are used to much more analysis of the characteristics of the subjects (e.g., socioeconomic status, health, educational attainment) in relation to performance. Welford's lack of emphasis on individual differences is revealed by the absence of correlations of subject attributes, other than age, to performance. On the other hand, he puts much more emphasis on the nature of the task presented to the subject than is usually found in the American literature. It is in analysis of skilled tasks and associated measurements that we can learn much from the book. Contrariwise Welford would have pointed up the generality of his findings had he correlated or been able to correlate subjects across tasks. Often he could not because the various experiments were done with different subjects in different places at different times. He gives the impression, moreover, that the investigators were not really much interested in the analysis of individual differences, their commonalities and uniqueness.

There are two aspects of a generalization or explanation of aging. One asks to how many individuals the generalization applies, and to how many behaviors (or what type) the generalization applies. On the first point Welford apparently does not expect that all individuals are to be included in his generalizations. Thus, whatever processes are involved, they would be discontinuous in the

population; not everyone shows aging. On the second point, Welford would probably take the position that the pervasiveness of a variable is determined by the extent to which the variable limits performance in a variety of tasks. Thus, the pervasiveness of speed changes with age and is determined by the number of tasks where speed is a critical or limiting factor in individual performance.

Being predominantly interested in the performance of a task in the present moment, Welford does not suggest biological or social manipulation to obviate age differences in performance but the varying of the nature of the tasks. He accepts as given the characteristics of the aging individual, determined by biology, experience, and the social milieu as the independent variables.

Throughout the experiments described, Welford treats speed and the temporal aspects of skills as appropriate to an adequate description of highly skilled activities. He does not use the probability of a correct response as his sole measure of performance, as some of his American colleagues too frequently do. On the other hand, a new and perhaps more sophisticated pitfall is thus created—one which is not totally avoided—by the use of the term "level of performance" to include both speed and accuracy as if they were correlated manifestations of a single variable and direct transformation were possible between them. The relations between speed, accuracy, age, task difficulty, and task complexity are by no means explicitly developed, although Welford hopes that information theory will 'turn this trick.' Meanwhile he uses the phrase *level of performance* to summarize a subject's achievement. What is needed about these relationships is more experiments and more precise experiments.

In his preface Welford said: "This book is the final report of the Nuffield Unit for Research into Problems of Ageing." It is to be hoped that this is not Welford's last word about aging. It would indeed be odd to regard this as a final report in a field of research now just beyond its neonatal stage. Surely Welford will stand by lest the child fall into bad ways and not develop as ably as this book portends.

## Readings, but Not a Textbook

Chalmers L. Stacey and Manfred F. DeMartino (Eds.)

*Understanding Human Motivation.*

Cleveland: Howard Allen, 1958.  
Pp. xv + 507. \$6.00.

Reviewed by GRAHAM B. BELL

*who is Professor and Chairman of the Department of Psychology in Pomona College. He was exposed to McClelland and motivation theory at Wesleyan as an undergraduate, took a PhD at Northwestern seven years ago, went to Louisiana State University and then, as a Fulbright Fellow, to Australia. He counts himself a social and clinical psychologist.*

THE editor's purport is "to provide a readable, interesting, basic, introductory text on human motivation for undergraduate courses." Their modus operandi was to select 47 readings by various authors in the area of motivation published between 1927 and 1956. In general, the selection of the articles has provided good coverage, ranging from Adler through Hilgard to Symonds. By careful organization the editors manage to arrange the individual articles so that within each section each one tends to follow the general argument of the one before. Although they appear to have done considerably more editing than one usually finds in a selection of readings, their consciences prevented them—and rightfully—from cutting out the repetitious introductory remarks in the separate articles, which, in the final analysis, must be included to provide a cogency for each author's argument.

One looks in vain for any comment on the modern concept of adaptation-

level in intrinsic motivation as proposed by Helson, Hebb, McClelland, and others. This deficiency may be due to the fact that only four articles published since 1950 have been included.

Since the editors are primarily clinicians, it is not surprising that all animal experiments are intentionally omitted. That is, of course, an editor's prerogative, but since so much of human motivation is based, at least by analogy, on experiments with animal subjects, their omission seriously weakens the editors' claim to provide a basic introductory text.

The reviewer, for one, was disappointed that the editors did not choose to include any of the articles by Leeper, Arnold, and others from the motivation-emotion controversy. It is difficult to understand how a text so inclined toward a historical approach could omit those sprightly and important articles.

The reprinting even of well-edited and well-organized articles, presenting as they must so many divergent authors' points of view, leaves the student with a confused chopped-up impression of the psychology of motivation. This particular approach to text-book writing provides interesting cocktail conversation and fertile stimulation to dormitory psychoanalysis, but little of the discipline one might hope to instill in future psychologists. The editors' failure to include a bibliography for the various articles individually or collectively reinforces the impression of a more or less casual approach to the problems of motivational theory and theory building.

To the extent that the editors could have been expected to succeed, they have done a good job; but they did not succeed in accomplishing the task they set for themselves, the task of writing a "readable, interesting, basic, introductory text." Equipped with a good bibliography, this book could become an interesting and useful reading supplement for undergraduate students.



*If language is not correct, then what is said is not what is meant; if what is said is not what is meant, then what ought to be done remains undone.*

—CONFUCIUS

## **Studies in Mathematical Learning Theory**

*Edited by*

**Robert R. Bush and William K. Estes**

This integrated collection of research papers is concerned with stimulus sampling theory and the application of Markov processes to learning situations; with a number of different results for linear models of the kind which have been intensively studied in the past few years; and with comparisons and extensions of the kind of models discussed in the first two groups. *Stanford Mathematical Studies in the Social Sciences, III.* \$11.50

## **The Psychology of Affiliation**

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In a series of masterly experiments, the author explores some of the major factors that determine our desires to be alone or with others. Aspects of affiliation and self-evaluation are examined under such conditions of stress as hunger, isolation, and fear of pain. *Stanford Studies in Psychology, I.* \$3.75

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This is the fifth volume presenting results of the famous Stanford studies of gifted children. The total study is a landmark in the identification of superior mental ability and of the factors that put it to effective use. *Genetic Studies of Genius, Vol. V.* \$4.50

## **The Structure of Freedom**

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"This is a significant study of a significant problem, making a novel and exciting contribution to the literature."—*David Krech.* "Dr. Bay's book is a significant and original contribution that will still be of importance ten years from now. . . . An impressive job."—*Clyde Kluckhohn.* "Most exciting."—*Herbert Hyman.* "An impressive performance. Of all the treatments of liberty, this is the first one that has fully considered the freedom of man as an individual."—*Wilbur Schramm.* \$7.50

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# The Mythology of Adolescence

Gerald H. J. Pearson

*Adolescence and the Conflict of Generations.* New York: W. W. Norton, 1958. Pp. 186. \$3.95.

J. Roswell Gallagher and Herbert I. Harris

*Emotional Problems of Adolescents.* New York: Oxford University Press, 1958. Pp. xii + 174. \$3.50.

Reviewed by RICHARD H. WALTERS

Dr. Walters is now a Lecturer in Psychology at the University of Toronto. He has advanced degrees from the Universities of Bristol and Oxford, and after them a PhD from Stanford University. At Stanford, he worked primarily with Albert Bandura with whom he is co-author of a book, Adolescent Aggression, shortly to be published by Ronald Press. He has been a lecturer in Philosophy at Auckland University College and also Psychological Consultant to the New Zealand Department of Justice. He has been associated in the United States with the Menninger Foundation and the Medical School of Northwestern University. He is currently interested in motivation, especially its effects on perception and verbal behavior.

DR. PEARSON, Dean of the Philadelphia Association for Psychoanalysis, has made "an attempt to present in as simple a form as possible some of the knowledge about adolescence gained from psychoanalytic research since Freud made the original contribution in 1905 in his monograph, *Three Essays on the Theory of Sexuality*." Although this book is said to be written primarily for students of medicine, psychology, psychiatry, social work, and sociology, it is also designed as a guide to adolescents and their parents.

Pearson has provided a lucid presentation of psychoanalytic theorizing about adolescence. Unfortunately, he presents theory as fact; he does not present the kind of data that most psy-

chologists would accept as research findings. Almost all of his supporting evidence consists of case-history material obtained from patients in psychoanalytic therapy. Since, during such therapy, responses of patients that support the theoretical orientation of the therapist are almost inevitably reinforced over a fairly lengthy series of sessions, they can hardly fail to provide some support for psychoanalytic theory.

Pearson's book should, however, prove useful to students in courses on developmental and adolescent psychology with its account of psychoanalytic theory, provided the instructor makes it quite clear, as the author does not, that the book gives but one possible interpretation, rather than a factual account, of adolescent development. On the other hand, the book seems to be quite unsuited, and even misleading, as a guide for adolescents and their parents. While the author is careful to differentiate his own opinions on some topics from opinions that are more widely held by psychoanalysts, he nowhere indicates that quite different views about adolescence may be held by scholars and research workers who do not entirely (or at all) accept the psychoanalytic point of view. His book might thus delude uncritical and unsophisticated readers into thinking that psychoanalysts possess unchallengeable answers to questions concerning adolescence. It is doubtful, moreover, whether an adolescent who is not both above average in intelligence and also the product of a 'cultured' home

could profit from reading this book. Indeed, to judge from Pearson's generalizations about certain aspects of adolescent behavior (e.g., sex behavior), it seems that he can, in fact, be writing only about and for adolescents of the upper-middle and upper classes—in other words, those who are most likely to experience psychoanalytic treatment.

Pearson offers some interesting personal opinions that could form hypotheses for further research. Some of these are essentially psychoanalytic, but others are not. For example, he suggests that the influence of the daily newspaper, with its reports of the behavior of real people, on the incidence of delinquent behavior may be much greater than that of such media as comic books, movies, and television. His comments on sex education are provocative and should help the psychologist realize how much need there is for research on this topic.

DR. GALLAGHER, a Boston pediatrician, and Dr. Harris, a psychiatrist at Massachusetts Institute of Technology, have collaborated to produce "a guide to help parents, teachers, ministers and others to understand normal adolescents and their everyday problems." According to these authors, adolescents "are normally confused" (italics are the authors), a statement that—like many others in this book—it would be difficult to substantiate, at least in the form in which it is put. Perhaps in a didactic book for laymen one should not expect the careful evaluation of evidence that one might expect in a book primarily meant for specialists. A book for laymen should, however, be written clearly, simply, and with due caution. One would not expect to find, for example, such phrases as "the exercises of the organists combined with the emotional catharsis of the school of depth psychology," especially when the technical terminology has not been previously explained with care. Carelessness of expression is often painfully evident, e.g.: "Mental health is our cardinal problem. It disrupts more lives than does physical illness."

This book has none of the merits of Pearson's book, having neither its consistency and clarity of expression

nor its occasional suggestive and provocative hypothesis, and it has all of the other's faults. The authors make many dogmatic statements that are not firmly supported by research (e.g., "adolescents who find . . . the acquisition of independence most difficult treat their parents most cruelly") and include far too many vague exhortations. There are sketchy chapters on mental health, sex, achieving independence, and various behavior disorders, including scholastic failure and homesickness. An equally sketchy chapter on testing (mainly psychological) is written with the same air of authority as the other chapters. The result of all this is a superficial and somewhat confusing book about supposedly confused people.

**B**OTH books depict adolescents as confused, rebellious, and unpredictable.

Much research, however, suggests that this picture may primarily reflect a cultural myth about adolescence, perhaps rooted in the Romantic tradition and perpetuated by the James Deans and J. D. Salingers of our day. Mental-health workers in clinics and other treatment centers have more contact with disturbed adolescents than with those who never come for treatment. The theories that guide their practice tend to be founded primarily on observations of patients. Consequently, both their experience and academic training encourage them to propagate what well may be a distorted picture of adolescence. The superficial nonconformity of some adolescents—expressed in their fondness for unorthodox clothes, language, and mannerisms—seems to draw attention away from their fundamental and deep-seated acceptance of parental values.

Both books show a relative lack of sensitivity to differences of social class. The broad generalizations that the authors make about adolescence minimize not only the differences between adolescent patients and adolescents who do not become candidates for therapy, but also those between adolescents who come from diverse socioeconomic and subcultural groups. A child who grows up in a New England city is subject to very different influences from one who grows up in a village in northern Ontario. A child who comes from a working-class family in an industrial suburb of a big city is not subjected to the same influences as one who comes from one of the city's select suburbs. Until proof of the contrary is produced, we should not assume that these children must face fundamentally the same kinds of problem during adolescence or, for that matter, at any other time of life.

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# An Eclectic Social Psychology

S. Stansfeld Sargent and Robert C. Williamson

*Social Psychology: An Introduction to the Study of Social Relations.* (2nd ed.) New York: Ronald Press, 1958. Pp. x + 649. \$6.00.

Reviewed by ALBERT PEPIONE

who is Associate Professor of Psychology at the University of Pennsylvania. He has a PhD from the University of Michigan, where later he worked for a couple of years as a project director in the Institute for Social Research. He went to Pennsylvania in 1951. His research touches decision-making, social perception, the social aspects of the defense mechanisms, and especially experiments in social psychology that study the arousal of hostility. He wants social psychology to be rigorously scientific but believes that many experiments are needed before theories can become stable.

In this large and readable second edition, Sargent and Williamson explicitly treat social psychology as an interdisciplinary field, comprising a large portion of general psychology, much of sociology, and parts of anthropology. Accordingly, their book touches upon an enormous range of topics—regression, Russian character structure, figure-ground phenomena, propaganda, spontaneous recovery, the Townsend Plan, heredity, and more. It is thus something of a bibliographic storehouse which unquestionably will be useful for the broad-gauged course in human relations.

There are, however, palpable weaknesses that stem from the 'broad' view of social psychology. For example, in parts of the book the organization tends to be diffuse and redundant. Chapter 4 includes a discussion of peer groups (from the sociological angle), while Chapter 15 is called *The Person and*

*the Group*; Chapter 8 is on group norms, while Chapter 11 has to do with interaction. This state of affairs—which certainly is not peculiar to Sargent and Williamson—strongly suggests that an interdisciplinary social psychology does not actually describe a common intersection of concepts and problems.

Sargent and Williamson intend their book as "an introduction to scientific social psychology or as an approach to more practical, applied studies." Presumably, a scientific primer should introduce the student to the empirical studies of social psychology and to the body of theoretical knowledge based thereon. Although one might have desired a greater emphasis on laboratory experiments, certainly much empirical work is cited in *Social Psychology*. Indeed, the chapter on social class is a masterly digest of modern sociological field studies. The chapters representing the 'narrow' conception of social psychology—that part of psychology which deals with interpersonal relations and group membership—do not come off so well. Their chief weakness is their ponderance of highly oversimplified and uncritical generalizations presented without sufficiently detailed supporting evidence. Perhaps some representative examples will show what is meant.

Norms develop by interaction and canalization

## ON THE OTHER HAND

### A GOAT BUTTS SHEEP

M. Scriven, in his favorable review (*CP*, Oct. 1958, 3, 295ff.) of *ESP and Personality Patterns* by psychologist G. H. Schmeidler and biophysicist R. A. McConnell, seems to have overlooked some crucial points.

Scriven is impressed by the "unusual statistical accomplishment" of the biophysicist; the analysis is "perfectly valid"; the statistical appendix "appears sound and highly sophisticated."

The existence and vitality of a group depends heavily upon the effectiveness of its norms

Cohesiveness is a function of factors such as cooperativeness, affiliation needs, social facilitation, and other motives and processes

In some cases, frustration operates to encourage group solidarity, notably when aggression comes from the outside in the form of attack

When a group's existence is in question, some member of the group is likely to assume the role of salvaging the group.

There are far more trenchant discussions than those suggested by the foregoing quotations. The chapter on role makes sense out of many different points of view and adds fresh interpretations. There is an extremely valuable summary of the important studies of social anthropology, in a chapter that contains the core of a course on culture and personality. An entire section is devoted to applied social psychology. Chapters on *Public Opinion*, *Mass Behavior*, *International Relations*, and *Ethnic Relations* are particularly well informed and admirably suited for a course in the applied area.

In sum, the book is eclectic and catholic; it is not particularly rigorous or systematic. It can serve as a valuable resource for many different types of introductory courses in social psychology.



He cites a difference significant at the .00003 level as "a highly significant fine structure" (whatever that is). This is for the difference in mean ESP performance of 692 "sheep" (those who think ESP possible) and 465 "goats" (skeptics). The respective means are 5.10 and 4.93. He says that "a great merit of this work is the extreme care with which possible difficulties . . . are approached." In other words, reviewer Scriven finds no reason for not accepting that .00003 (and another .00008)

level of significance as indicating a real difference between sheep and goats.

Let's take a look. In the first place, Schmeidler and McConnell are searching for possible personality correlates of ESP performance. To this end they must have an ESP score for each person, and said score must, of course, possess some reliability before we can expect to find correlations with other variables (including the sheep-goat dichotomization). They do not report any measures of reliability, but from the group-collected data given on p. 49 one can easily calculate a reliability coefficient for individual scores where such scores are defined as the average over runs. It is a piddling .059!

How can a variable with near zero reliability (based on 1,157 cases) show a relationship with another variable, such as attitude toward ESP (sheep vs. goats), that reaches the highly impressive .00003 level of significance? The answer is, in this case, easy: *inflated Ns*. In effect, the standard error of the difference between the two means was obtained by using the number of runs (5,985 for the sheep and 4,050 for the goats) instead of the number of persons (692 and 465). When the correct and only defensible *Ns* are used in calculating sampling error, the *t* is reduced from their 4.20 to 1.43, significant at the .15 level.

The proper *Ns* must be 692 and 465 because the authors were attempting to generalize to populations of sheep and goats (p. 48), and for this the sampling unit must be the person, not the run. This is the old worrisome chestnut of multiple observations per person on a single variate and the consequent choice of *N* for calculating a standard error. It is a simple principle of elementary statistics that the sampling stability of a statistic, such as a mean, is a direct function of variability of scores and an inverse function of sample size. The gain from having multiple observations is reflected in a more reliable score (an average over, say, *m* measures) for the person. This increased reliability tends to reduce the error of measurement component of obtained score variance over persons, hence reduces somewhat the standard error of the mean. But the reduction in the standard error is, typically, minute compared to what happens when the standard error is based, falsely, on an *N* that has been inflated *m*-fold.

The same erroneous use of runs as *Ns* is involved in testing the sheep mean and the goat mean against "theory," or chance guessing (p. 49 and p. 36), and also for sheep vs. goats (p. 36) for individually collected data. For this last comparison a

*t* of 4.06 is reported significant at the .00008 level; the correct value is a *t* of 1.01, significant (?) at about the .31 level. Incidentally, and as an anticlimax, the reliability coefficient (sheep and goats combined, *N* of 151) for the p. 36 data is -.04; yes, *minus* .04.

Thus, the claims for better performance on the part of sheep over that for goats vanishes into the fluffy air of statistical miscalculation. Anyone who wishes to make anything of the consistency in the comparisons between sheep and goats should consider the admission by Schmeidler and McConnell (p. 125) that the experimenter could not always be sure that the subject's designation of himself as either sheep or goat was made independently of his ESP performance!

When Scriven observed that, if there is nothing to this stuff, "the statistical underpinning of ordinary psychology is overdue for collapse," he was apparently unaware of the unreliability of ESP scores, the use of inflated *Ns*, and the lack of experimental control in the sheep-goat categorization. As I see it, there is indeed nothing to this stuff, nor is the statistical basis of ordinary psychology as yet collapsing.

QUINN McNEMAR  
Stanford University

#### CORRELATIONS VS. CAUSES

In his review of the Hollingshead and Redlich volume *Social Class and Mental Illness* (*CP*, Feb. 1959, 4, 33-35), R. E. L. Faris asserts that the study provides evidence for the etiological significance of social class factors in mental illness. For example, he closes his review with the comment: "The outstanding achievement of the enterprise is the strengthening of the already massive evidence that social conditions are of major importance in the causation of mental abnormality." He also accuses the authors of being "fogged by [their] sentiments of indignation about the injustices of a social class system," and therefore of appearing "to believe that differential treatment in the various classes is a significant matter in the variation of prevalence rates."

Both of these points grossly misrepresent and distort the findings of this study. Hollingshead and Redlich were concerned only with the "treated prevalence of mental illness" and such data cannot in any

way be used to demonstrate the causative relation of social factors to the occurrence of mental illness. Secondly, the primary significance of the book lies in its being a study in the sociology of psychiatric practice; the most important findings lie in the evidence accumulated on the systematic pattern of social class discrimination in the treatment of the mentally ill. To dismiss this fact, as Faris does, as reflecting "moral concern" is to violate completely both the spirit and substance of the book.

Space does not permit an extensive documentation of these comments (for a detailed examination and evaluation of the study, see the expository review by S. M. Miller and me in the Spring 1959 issue of the *Milbank Memorial Fund Quarterly*). Two recent statements by the book's authors may serve as partial evidence for our position.

In response to specific questions on these points, Redlich said: "The New Haven study has really not brought out anything which is of etiological significance in explaining differences in prevalence, and prevalence in itself is not a very good measure from an epidemiological viewpoint. . . . We found, as far as the accumulation of schizophrenia in the lower classes is concerned, that, although not entirely, it is mostly due to the fact that the lower socio-economic groups get different treatment and have different opportunities for rehabilitation" (*Symposium on Preventive and Social Psychiatry*, April 15-17, 1957, Walter Reed Army Institute of Research, Washington: U.S.G.P.O., 1958, p. 199). In a personal communication, Hollingshead writes: "At no time did we half claim that our study was focused on etiology. Second, we always looked upon the phase of the study published . . . as a study of treatment; not an epidemiological analysis" (5 March 1959).

This is an important book and psychologists should read it and not depend on the second-hand knowledge that may be gleaned from reviews. The foregoing quotations from the authors at least caution readers against a too hasty incorporation of reviewers' abstracts or chapter summaries into their lectures, seminar notes, and textbooks.

ELLIOT G. MISHLER  
*Joint Commission on Mental Illness and Health, and Massachusetts Mental Health Center*



*The right to be wrong is quite as important as the right to be admired.*

—EDWARD R. MURROW

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